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The thing about NCs...

There's a tendency for all of us involved in the computer industry to be constantly on the lookout for THE NEXT BIG THING. It's a positive approach really, for prudent business people to seek out, identify and leverage the next big opportunity.

Yet, there are potential pitfalls too, of getting too hung up on possible niche-only products.

If we give credence to such industry giants as Sun Microsystems' Scott McNeely and Oracle's Larry Ellison, then certainly that NEXT BIG THING would be the Network Computer (NC), according to the specifications set out by these companies and their partners. (The software and data reside on the network, while the NCs are plug-and-play, without local permanent storage capability.)

If we lay aside the glowing trends that such a paradigm would boost the profits and profits of these companies' server-level hardware and software, then we can see the dilemma of the NC effort to lower the cost of computing. That cost is, of course, considerable.

PCs Are Expensive

The Gartner Group was a forerunner in producing numbers to show just how expensive computing really is. And last November, based on a study of a 1,500-user implementation, that research firm reported an annual cost of US\$18,000 to own and operate a "personal productivity PC." Moreover the company says only 10 per cent of those users truly used the flexibility of today's PCs.

That's some of the rationale for NCs. Yet, there's a whole lot to be said for media and the status quo. In some environments, PC users would no doubt revolt in anger at the prospect of any loss of any of their computing capabilities or functionality. And information technology managers, with a whole lot of learning and mistakes revealed in *Wintel*, won't be really quick to leap to a new platform.

Nevertheless, some companies are exploring the possibilities. So, for example, Paul Kinn's "NCs Get E.D. South Of O' A Sea," (page 24) Corporations looking to computerize *ack* departments, or organizations with particular security concerns (remember, no uploading or downloading data, software or viruses), are

prime NC targets.

In "NCs versus PCs?" (page 18), CCM's Associate Editor Jeff Dean explains how NCs have sparked an industry-wide response to the "Total Cost of Ownership (TCO)" issue and indeed, how the very fact of traditional computing is evolving to address these concerns. Most obvious is the NetPC standard endorsed by companies such as Microsoft and Compaq.

The Gartner Group, in its "Technology Radar Series: 1998" (<http://gartner.com/pub/totalsummary.html>), describes the trend under the water definition of "network computing" and predicts it will make significant inroads into technology and professional services industries in 1998 and 1999. But it will be longer (2000 to 2003) before it finds mainstream adoption into other markets, such as banking, government and manufacturing.

But Prices Will Drop

Tied into the trend of putting more power and control on the network is the drive to manufacture low-cost computing devices. In fact, that's one of the predictions proposed for 1998 by International Data Corp. (<http://www.idc.com/IDGpressroom.html>). IDC says that-tier PC suppliers will ship computers in the US\$300 to US\$700 to consumers within the next 18 months. In fact, the market research firm argues that's the price point needed to boost home PC penetration to the 65 to 80 per cent range.

(Also of note, while IDC says document imaging and data mining will go quite mainstream in 1998/99, speech recognition and electronic mail are predicted to be fairly niche cost into 2000 to 2002, and beyond.)

Speaking of home PCs, do check out our special feature on games software ("It's All Fun And Games," page 28), and CCM's very own Lab Test, which this month compares and examines the latest CD recorders ("CD-R Drive: The Next Generation Is Here," page 30).

Meanwhile, while some niche industry players will no doubt make their fortunes on the opportunity of NCs, it's not so much the specific platform that will impact as all — it's the movement.

NC it's the new attitude. And of course — THE NEXT BIG THING. ☐

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Has Apple turned the corner?

At the recent MacWorld conference in San Francisco, temporary Apple CEO Steve Jobs had a string of good news to present to the faithful, including strong sales numbers for the latest models of Power Macs, a quarterly profit, and, most intriguingly, a major boost from Microsoft in the form of a new, leading-edge Mac version of the Office 98 business software suite.



According to Jobs, the new "G3" Macs based on the latest ultra-fast PowerPC chips, sold more than 133,000 units in their initial release, well in excess of a projected 80,000 units. Apple also announced a US\$45 million profit for the most recent quarter, a great improvement on the uninterrupted losses of the previous 18 months.

Stora Technology to acquire Logitech's scanner line

Stora Technology, a rapidly growing manufacturer of affordable consumer PC scanners, has signed an agreement to acquire Logitech's scanner line.

The terms of the agreement included Logitech receiving 10 per cent equity in Stora, plus US\$5 million in cash and notes, plus possible future revenues based on future sales in Europe in 1998.

The nature of the new relationship between the two companies is more a strategic alliance aimed at increasing market share than a buyout. According to Bill Krause, president and CEO of Stora Technology, the deal will allow Stora "to build on its strong position in the photo-scanning segment and strengthen its recent entry into flatbed scanners, while offering a broad range of additional scanning choices to customers." One of the most innovative products acquired by Stora is the PageScan USB scanner, one of the first Universal Serial Bus scanners actually shipping.

Windows 98 beta rolls out to 100,000 home users

(NR) — Microsoft Corp.'s Windows 98 has entered its third and final phase of testing.

A maximum of 100,000 E-mail messages will be sent to selected U.S. and Canadian "computer-savvy" home users over the next three months, inviting them to join the program.

Similar beta programs will be available from other Microsoft subsidiaries worldwide, says Microsoft.

Windows 98 supports the latest hardware changes, with entertainment features and improved Internet functionality, the firm claims. The program makes better use of existing hard drive storage, gaining as much as 30 per cent more space without compressing the drive.

The new version of Microsoft's Office 98 Macintosh Edition, due to be released in March, offers leading-edge features such as automatic self-repair of accidentally deleted files, drag-and-drop installation and font integration. As well, the latest release of Mac OS 8.1 was touted as a sign of Apple's technological rejuvenation, as Jobs tried to paint a picture of an unstoppable Apple recovery.

For Mac resellers and third-party developers, as well as the millions of Mac loyalists, a turnaround is desperately needed and overdue. For the computer industry as a whole, although many Windows/Intel PC users manage to go far enough without even thinking of the Macintosh, a recovery of Apple's fortunes would have many beneficial consequences for all computer users. Bill Gates' anti-trust troubles with the U.S. Justice Department might be eased by the continued existence of a viable competing computer operating system, while computer users generally would benefit from a reversal of Apple's leadership as an inventor of new user-friendly personal computing technologies.

How fast IS that bus?

There is an inaccuracy in the January Lab Test for the ASUS T302 motherboard. Steve Haisala and Tim Benjamin-Wells state that the ASUS T302 does not support bus speeds higher than 66MHz.

This is incorrect. The T302 supports bus speeds up to 100MHz (although not documented in the manual) and is capable of having support for 133MHz bus speeds via a special wiring. It may also interest you to know that there is a special 3.3v multiplier on this board that can be enabled with the BIOS jumper (See "Basic Hardware Guide" — <http://www.asus.com/usa>).

You should also note that ASUS was the first manufacturer to enable support for bus speeds higher than 66MHz on a Socket 7 motherboard.

Ryle Shadok, Desktop Specialist
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Editor's Note:

While it may be true that the board does indeed support bus speeds of 100MHz, 66MHz is the highest speed officially supported by the manufacturer.

Correction:

Oops, How Big Was That Really?

In CCW January, page 28, the chart listing different sizes of storage units was less enlightening than we'd hoped, as we'd listed up a few of the units and values incorrectly. Here, is the correct explanation of the number of bytes in these various units of storage: Kibibytes — 1K; Megabytes — 1M; Gibibytes — 1G; Tebibytes — 1T; Pebibytes — 1P; Exbibytes — 1E; Zebibytes — 1Z; and Ybibytes — 1Y. Thanks to Roger Zalla, Glenn Clarke, Joseph Wroblewski, and JRP for pointing that out!

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For length and clarity

Please write to The Editor, via E-mail at ccw@pc.ca, or fax (416) 262-1332.

ThinkPad is five years old!

Just over five years ago, IBM introduced a new standard in DOS/Windows notebook computers with its first ThinkPad notebook. Bringing a "no-compromise" attitude to the integration of desktop PC capabilities into the notebook form-factor, IBM took over the leading edge of mobile computing from Apple's PowerBook line.

The immediate response to the ThinkPad undoubtedly caused IBM instant enthusiasm, when orders dramatically outstripped IBM's capacity to fill them. In particular, a critical shortage of high-quality active-matrix color screens limited production for several months. However, the good reputation that the ThinkPad acquired more than outweighed the initial teething troubles. Although Toshiba, with about 40 per cent of the Canadian notebook market at some recent quarters, is the best-selling brand, IBM still rates as the class act in the notebook market. In terms of pushing the envelope of mobile computing, various models of ThinkPad, ranging from thin (3 pounds) to light (4.1 pounds) to packed with multimedia muscle (including DVD and MPEG-2 playback) are still the standard for other notebook PCs to beat. At the recent Comdex show in Las Vegas, the ThinkPad won an additional title of industry award in addition to the substantial collection it has accumulated over the last decade.



HDTV big at CES in Vegas

(NAB) — Approximately 100,000 people attended the thirty-first annual Consumer Electronics Show in Las Vegas.

They marched through the equivalent of 22 football fields to see the latest consumer electronics, from gadgets to 500,000 HDTVs. New high-definition televisions, Microsoft's debut of our multi-media, and a new line of palm personal computers (PVCs) were top attractions this year.

This show may very well be remembered as the year that HDTV debuted.

The new digital television technology has a hurdle ahead, but the Consumer Electronics Manufacturers Association (CEMA) is backing wide-screen, high-resolution, digital audio TVs as the wave of the future. Mitsubishi, Pioneer, Philips, Hitachi, JVC, Samsung, Sharp, Sony, Zenith, Thomson, and more each have their own versions of HDTV.



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Microsoft and Silicon Graphics form strategic alliance

Microsoft Corp. and Silicon Graphics Inc. have announced an alliance code-named "FutureWin" that's aimed at creating a suite of application programming interfaces (APIs) for high-performance graphical computing on both the Microsoft Windows operating system and the Silicon Graphics Unix-based system.

This close relationship comes, in some ways, as a surprise, in the sense that the rapid advance in the capability of high-powered Windows NT workstations in the graphics market could be a challenge to SGI's high-end Unix workstations. However, the two companies have a long association in the graphics field.

Shoe computers?!! Digital batons and PLUMs?



(MIT) — The latest innovation at the MIT Media Lab has the germ from a new concept mechanism known as PLUM

(Pocket Love and Understanding Meant) to "shoe computers" and digital batons.

Created by an MIT student, PLUM is designed to go a step beyond news filtering, adding meaning to news stories by placing information in context for users, said Walter Bender, associate director of the MIT Media Lab.

Bender demonstrated how PLUM has enhanced the following sentence from an actual news story: "750,000 acres of farmland have been flooded in China."

Most people have no idea as to "how big" 750,000 acres really is, according to Bender. So to overcome that problem, PLUM presents users with on-line maps, which differ according to their own physical locations.

In the musical instrument arena, MIT has already attached sensors to the bow of a cello,

to analyze the complex and nonverbal associated with expert playing.

Soon the lab will combine this kind of cognitive sensing with wireless technology, to study human use of the violin.

A new digital baton is designed to use sensors and optical technologies from the baton's previous use to let you "play" a guitar remotely — simply by manipulating the baton.

The lab is working on a variety of PAN (Personal Area Network) projects including an application that lets users exchange business card information by stepping on a server's embedded in their shoes.

The speaker predicted that these kinds of applications will soon become more widespread, with the emerging use of less costly sensor technology — along the lines of today's "ubiquitous tags" — specifically aimed at communicating only a single bit of information.

Bender maintained that these computer-aided projects in the medical arena, for studying how childrens move their feet, and thereby helping to prevent physical deterioration from the disease. □

Contact: The Editor

LETTERS

Canadian Computer Wholesaler welcomes your opinions on current issues in the market, plus your feedback on our publication.

NEWS

We welcome your ideas regarding news and feature topics for Canadian Computer Wholesaler. Feel free to contact the editor directly with your suggestions.

TEST LABS

We'd like to help your feedback and suggestions on our Test Labs review section.

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Hummingbird, Andyne conclude acquisition

(NBS) — Shareholders of Andyne Computing Ltd. have approved a takeover bid by Hummingbird Communications Ltd., clearing the way for Andyne to amalgamate with a wholly owned subsidiary of Toronto-based Hummingbird.

Hummingbird, which develops document distribution and internet-working products, sees the Andyne acquisition as a way to move into the data warehousing business.

ATI hits \$100 price point with XPERT XL 2D and 3D accelerator
 Throwing down the gauntlet to every other maker of graphics accelerator cards, ATI Technologies Inc. has introduced a new, high-powered single slot card, the XPERT XL, for \$99.

ATI claims the XPERT XL offers "quality and performance that rivals the \$300 specialty boards for a street price significantly under the \$100 price point." The XPERT XL comes with 4MB of EDO RAM on board, the latest ATI RAGE PRO chip technology, a 4MB image cache, bilinear and trilinear filtering, Z-buffering and correct texture mapping for superior 3D rendering. The XPERT XL supports full motion and full screen DVD playback, and with its ATI Multimedia Channel, allows upgrading with the ATI-TV tuner. Aside from providing extremely tough competition for Matrox and Number Nine, the other major makers of quality PC graphics cards, the XPERT XL will allow "cheap" PC makers, in particular, to build low-cost PCs with high-quality graphics capabilities.

Toshiba unveils 233MHz notebook, Eurocom claims 266MHz model

In the continuing battle for the fastest notebook computer, market leader Toshiba of Canada, Ltd. and Canadian notebook maker Eurocom both coded 1997 with announcements of their latest "power users' notebook PCs. Toshiba's latest Tecra 7500DVD is built around a 233MHz Intel Pentium MMX processor, with 4MB of RAM, a DVD-ROM drive, a 5.1GB hard drive, and MPEG-2 hardware decoding, for a suggested list price of \$6,219.

Eurocom has countered with its latest version of the Eurocom 8500 notebook, boasting a 266MHz Intel Pentium MMX chip, a 15.1-inch active matrix display (up to 1600 by 1200 pixels), DVD-ROM drive, a 5GB hard drive, up to 128 MB of RAM, an optional 20X CD-ROM drive or MO drive, 4MB of video memory, dual USB port, swappable floppy, and optional 3.5/120 or Zip drive. Pricing starts at \$5,995.



Toshiba 7500

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Source: Computer World, 12/22/96, p. 21, 22, 23

Why AGP
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PERFORMANCE (MIPS/SEC/MB)	PCI	1X

See website at <http://www.epox.com> for more details



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Famous Canadians will choose the name of Telesat's new satellite

(NR) — Entertainers Bryan Adams and Dan Aykroyd are part of a pool of famous Canadians who will select the name of Telesat Canada's new direct broadcast satellite to be launched next fall.

Telesat has so far received more than 6,000 possible satellite names since launching its National Satellite Contest in November — and Telesat vice-president Marilyn Wright says entries include both the word and the wonderful.

In addition to Adams and Aykroyd, the panel includes Canadian astronauts

Marc Garneau, Chris Hadfield and Steve MacLean, Peter Kent, news anchor for Global Television, Martin McBrian, Canadian rower and Olympic gold medal winner, Dr. Michael Smith, scientist and Nobel Laureate, Lance Chilton, news anchor for The New York Times, Orrin, Ont., Bob MacDonald, host of CBC Radio's *Quirks* and *Quarks*, Michael Harding, director of Vancouver's Pacific Space Centre, and executives from some of Canada's leading corporations, including Express-Via, WCC Western International Communications, and Xerox Canada.

Wright said the names will be short-listed and distributed to the panel members, who will then teleconference in an attempt to choose the one winning number

that will accompany the new bird into orbit, along with the contest winner's name.

She added that when Telesat's first satellite, Anik, was launched in 1972, the name had been chosen through a similar contest. "The winning entry," she said, "came from a woman living near Montreal. Anik is the Inuit word for 'brother'."

A separate category for Canadian high schools gives students a chance to win a \$20,000 grant or bursary for their school. To be eligible, students must submit a short essay (less than 500

words) that responds to Telesat's challenge: "In a creative way, tell us what you think satellites will be doing for humanity in 25 years," Wright explains.



PC Docs acquires Fulcrum Technologies

PC Docs International Inc., a major vendor of corporate document management systems, has signed agreements intended to lead to the acquisition of Ottawa-based Fulcrum Technologies, an innovative firm that has been a quiet world leader in the creation of powerful database search engine software.

The deal was structured as a stock swap, in which PC Docs Group would trade about 19.9 per cent of its stock for all the shares of Fulcrum. Fulcrum's major stockholder is Dataquest International S.P.A., which holds 62 per cent of Fulcrum. Industry analysts studying the proposal seemed unanimously convinced that Fulcrum will be a good fit with PC Docs, since Fulcrum's powerful search technology would allow PC Docs users to rapidly and effectively search through databases to find and analyze important information.

ATI in licensing deal with Silicon Graphics

(NR) — ATI Technologies Inc. said it has a deal with Silicon Graphics Inc., allowing it to develop and distribute products compatible with the OpenGL application programming interface (API).

ATI, a developer of graphics hardware, said it has a Level III license to develop products compatible with OpenGL, which accelerates high-performance three-dimensional applications and games. □

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Page 62

Comdex/PacRim highlights business in the west

by Grace Connors



much of the product information closer to home, the show let him make personal contact with business associates. "The idea is meet the

Show organizers were expecting more than 35,000 channel players and corporate end users would flow through Comdex/PacRim '98 last month in busy Vancouver.

Greg Giesse, president of Edmonton-based reseller The Byte Truck, said while he could get

people I know face-to-face."

A lot of people had that idea in mind. For example Trojan Computer Corp. has recently broadened the marketing of its professional, expandable line of notebook computers into Canada. Cory Carhart, sales manager for Canadian representative Interlobe Trading, of Port Coquitlam, B.C., said the company is looking for Canadian resellers to carry the Trojan products.

Symantec was on hand at the show with a new Canadian general manager — Chris Mazzoni. His stated goals for his new job include a renewed commitment to the Canadian retail and reseller channel.



Chris Mazzoni

Canadian Computer Wholesaler's Technical Excellence Awards at Comdex/PacRim

by CCW staff

Every tradeshow attendee is on the lookout both for the most hot technology, as well as innovation and excellence in existing product categories. The editors of Canadian Computer Wholesaler and Canada Computer Paper Inc. put themselves to the task of recognizing several noteworthy products showcased at the recent Comdex/PacRim '98 computer tradeshow in Vancouver. In no particular order, here's our list of winners:

IMPAQ

Siavonix 8000 — At nine pounds, this notebook computer is a heavy-weight in every sense of the word. Top on the list is a lovely 15 inch active matrix screen, and a 386MHz Pentium processor, a 3GB hard drive and a 20X CD-ROM. It's expandable, ready to accommodate a second hard drive, DVD, MD, LS 120 or internal ZIP drive.

VIEWSONIC

Perfect Picture — This 15-inch flat panel model can physically swivel from head scope to portrait mode. The innovative

technology is priced at \$2,249.

FLUKE

880-682 Datascope LANMeter — Mississauga, Ont.-based Fluke Electronics Canada has released a Fast Ethernet portable management and analysis tool that also allows for troubleshooting over the Internet. Support is included for direct cabling, BNC and T/E/T connections.

SHARP

Modeler MC-4500 — This Windows CE 2.0 machine offers a 8.5-inch color screen with 16MB of RAM. An optional feature

lets the user attach the CE-AD04 digital camera, to capture and E-mail photos. The Modeler can also act as a voice recorder.





Dragon
Dragon Eye

The company also introduced a competitive upgrade program to encourage users of other packages to switch to Norton AntiVirus. The "Make The Break" program includes software to remove the current anti-virus product, special pricing and discounts on new licenses, plus a money-back guarantee.

Sceptre Technologies Inc., a manufacturer of monitors and notebook computers, announced the signing of Sanyo Computer Inc. as an authorized distributor.

Richard Gallegos, director of Canadian operations, said the company was attracted by Sanyo's ties into the mass market, via relationships with large Canadian retailers.

Ned Freggott, marketing manager for desktop operating systems, Windows platform team, at Microsoft Canada, was on hand demon-

strating the upcoming release of Windows 95, due in Q3. Among the key features is the Active Desktop, which lets users incorporate dynamic data streams off the Internet.



Strat (USB), On Now, and allows for the attachment of up to eight monitors as one continuous desktop. (Don't throw out those 14-inch monitors just yet!)

Ned Freggott says Windows 95 applications will load 30 to 50 per cent faster under Windows 95, and will run 10 to 20 per cent faster. ☐

CREATIVE LABS

PCDMD Encore Gen2 — The impressive DVD PC upgrade kit brings high-quality DVD play to the desktop, supporting 2X DVD-RAM (up to 170MB), and incorporating 2X CD-ROM technology.

NEWTek

LightWave 3D 3.5 — This sophisticated 3D modelling and rendering software is feature-rich — aimed at professional-quality animation. Indeed, the software was used for special effects in major TV series, as well as movies.

EPSON

Epson 600V printer — This network-ready 1440 x 320 dpi color inkjet printer is perfect for the small workgroup. It supports Windows PCs and Macs, multiple network protocols, and comes with network configuration utilities.

MERZCOM

MapScope — Finally, a Java application we can really use. This mapping and navigating tool lets users produce dynamic maps of Web pages, to ease navigation.

ADVANCED RECOGNITION TECHNOLOGIES

seriAKISpeak — This 10KHz compact voice recognition software works nicely for command and control applications, and

has been ported to Windows CE, Windows 95 and NT.

BC TEL

MultiMedia Gateway — This ADSL Internet service promises speeds up to 60 to 160 times a 28.8 modem, even allowing away-cable modems. There is a set-up fee and the monthly rate is \$64.95.

HITACHI

ViewBook Revolve — This mini-notebook on display with distributor IBM Data Systems packs an 8.4-inch active matrix VGA TFT screen, and a Pentium 133MHz MMX processor into a 2.75-pound unit. Offering about 2.5 hours of battery life, the mini-notebook should be attractive for weight-conscious business travellers, at a price of US\$2,599.

SCEPTRE

Dragon Eye 80A — This 17-inch CRT monitor caught our eye for its superior flat-screen with excellent resolution all the way to the edges. A dual-position screen adjustment system scored points for ease-of-readiness.

ATI

All in Wonder Pro — This graphics and multimedia board from Canada's own ATI includes a television tuner with DSS stereo 3D and 2D graphics acceleration, and fast motion video capture, and high-

quality video playback.

TOSHIBA

Pace 766CDV — This notebook is significantly equipped, with a 333MHz MMX processor, a DVD-ROM drive, an integrated videoconferencing system with digital camera, 64MB RAM, and a wireless-idea system.

Pricing starts at a suggested retail price of \$8,275.

MICROSOFT

Office 95 for the Macintosh — Kudos to Microsoft for adding translations to the Mac version of Office and beyond what is currently available on the Windows platform. For example, a spell-checking feature allows the system to re-install missing files that a user inadvertently deletes.



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by David Douglas



Nothing seems to excite a technology crowd more than a demonstration of a new personal-machine interface. I think we'd all like to interact in a more human way with those lumps of metal, plastic, and silicon we call computers. So, every time we use a computer, understand our handwriting, use speech or our gestures, we get excited over the possibilities. But the question is the possibility to do what? It's a big leap from speech recognition to silicon sentences.

When you get right down to it, all these alternative input methods do one main thing: they free us from the keyboard. How many scenarios can you think of where that would be a good thing? There are many and each one represents a potential opportunity. The ground that's been covered before includes so-called assistive devices for people with physical injuries or disabilities who cannot use a keyboard. Another use that's often mentioned is for the typing-challenged creative writer in the downsized corporate environment, no longer has as constant to "take a letter."

IBM, Lernout & Hauspie and Dragon Systems have all introduced continuous speech programs for PCs, which allow the user to enter text into a word processor by just talking in a normal way. Recently I've come across two software applications that are using speech engines in other ways. One is a language training program developed by The Learning Co. and Berlitz, and being marketed

under the Berlitz brand. The line includes Berlitz French, Berlitz German and Berlitz Spanish. When you pronounce a word or phrase in the foreign language, the speech engine evaluates the quality of your pronunciation and indicates on a meter how accurate you are. It also records your voice and allows you to play it back and compare your pronunciation to a native speaker of that language.

The other product is from Edmark, which has incorporated IBM's speech recognition engine into a reading readiness program. (Edmark was acquired by IBM last year.) In Edmark's latest *Let's Go Read: An Island Adventure*, the child can use the speech recognition engine in three ways: as a basic digital tape recorder, as a voice command system, and as an evaluation tool where the program gives feedback on the sounds that a child pronounces. Imagine how far speech recognition will have progressed by the time the kindergarten child using this Edmark program reaches adulthood.

But let's not wait a generation! There are a number of situations in today's work world where being liberated from the overly keyboard would be a good thing. When you combine technologies like voice and pen input with a device like a hand-held computer, new possibilities for mobile data input arise. In fact, voice interaction may be the key to solving one of the inherent limitations of these devices: the poorly keyboard.

When the Apple Newton was first introduced, developers saw its potential as a number of vertical markets. This gave rise to niche products such as medical software for the Newton. Similarly, when Windows CE and the handheld PC were first introduced, the software that was being demonstrated included forms processing and other kinds of data entry applications. Because the first-generation Windows CE devices did not have handwriting recognition but did have a pen-sensitive screen, handwriting programs were also being developed.

One handwriting recognition developer was Advanced Recognition Technologies Inc. (ART). Recently ART updated its handwriting product and introduced a line of speech-based products, which can be used with Windows CE devices that have a built-in microphone.

The company's smARTCommander utility allows a handheld computer user to program voice commands to launch and control applications. For example, a user could say the command "Wool" in order to launch the word processor.

The smARTConnect utility adds voice recognition capabilities to the contact manage-

Let's go read.
An island adventure.



or built into Windows CE 2.0. With smARTConnect, a user can train the system to recognize a contact's name. Then, saying "dini" would cause the computer to look up the contact's phone number and play the dial tones representing the phone number. Hold the speaker up to the phone's microphone and you've made a call. Similarly, saying "E-mail" would launch the E-mail program and automatically insert the contact's E-mail address.

The company has also made available a software developer kit called smARTLink SDK for Windows CE 2.0. The kit will allow developers to include speech recognition capabilities in products they develop for the handheld computer.

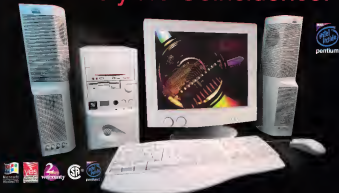
ART also introduced an upgrade to its smARTWriter handwriting recognition package. It now includes an option to select different ink colors, which will be handy for the new breed of handheld computers with color screens. The company also claims that the recognition engine has been improved and a number of usability improvements have been incorporated. ■

Contacts:

The Learning Company
<http://www.learningco.com>
 Edmark: <http://www.edmark.com>
 Advanced Recognition Technologies
<http://www.artcomp.com>

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NCs versus PCs?

By Jeff Pons

The NC has some solid strengths in its favor, but the PC

is still the most powerful and flexible computer available today.

that ever adaptable, general-purpose and masterful one,

the PC is still the most powerful and flexible computer available today.

is evolving slowly to add NC-like efficiencies to its bag of tricks.

the PC is still the most powerful and flexible computer available today.

In a computer market where the Windows PC has become so dominant, it's often hard to conceive of competing being done differently from the way most people do it these days. That's on a personal computer with an integral hard drive, which is equally comfortable with being connected to a business LAN or the Internet or no network at all.

However, for a variety of good and not-so-good reasons, a concerted effort has been made in the last couple of years to create the Windows PC and replace it with the Network Computer (NC). Not coincidentally, those promoting the NC have a second agenda to diminish the dominance of the Microsoft Windows operating system and third-party Windows applications software library, by replacing them with applications written in the Java programming language, and administered from centrally Unix-based network servers.

Many billions of dollars are riding potentially on the outcome of the NC versus PC struggle. Is the combination of NC and Java the wave of the future, or is the Microsoft/Intel PC juggernaut unstoppable?

The NC has some valid strengths in its favor, but the PC, that's not adaptable jack-of-all-trades and master-of-none, is moving quickly to add NC-like efficiencies to its bag of tricks. The outcome of the struggle is most likely to be a merging of NC and PC, with the PC remaining the predominant player into the next decade.

The Revolution Nobody Wanted, Except The People

Almost none of the professionals in the computer industry of the 1960s and early 1970s anticipated the personal computer, and few wanted it when it did appear. The reason was that competing professionals (managers, middle, managers) were quite happy with the traditional way computing was done: highly centralized, manageable mainframe-based networks, with end-users connecting to the system via inexpensive, easy-to-administer "dumb" terminals.

The PC, by comparison, was a manager's nightmare: decentralized, non-standard, and hard to administer. It was also an accountant's bad dream: expensive, and almost impossible to measure in terms of productivity or cost. Yet, end-users loved it. The PC was infinitely flexible, and allowed the individual user to make choices regarding software, peripherals, and other performance factors.

Initially, PCs were routinely stand-alone devices, but as they gained popularity, ways were found to connect them to net-

works. Major companies such as Novell, Artisoft and Adaptive made their fortunes devising ways to integrate PCs into various sizes and kinds of networks.

By the early 1990s, however, it began to become apparent that the PC was prohibitively expensive in a networked environment. Studies by major consulting and research firms indicated that the annual cost to a business of maintaining a networked PC ranged from US\$8,000 to US\$15,000 per PC per year.

At the same time, the productivity benefits of PCs were demonstrated to be modest at best. This shocking discovery opened the door for those who wanted to go back to the "good old days" of centralized computing, and resurrect the first/NC initiative.

The Network Is The Computer

Several years ago, Sun Microsystems founder Scott McNeely initiated an effort to create

an alternative to the Windows PC that was beginning to nibble away at the lower end of the Unix work station and server markets. McNeely sponsored the development of a new programming language named Java, which would be "platform independent," and would rely on servers to store programs and files for distinct "thin client" NCs. (Although Java applications can run on any kind of compatible computing device, they are designed for networked computers.) McNeely's vision was to restore the virtues of unity and efficiency to computing by sweeping aside the costly personal computer along with its excessive complexity and cost. At the same time, he would humble Bill Gates, his most deadly competitor and avowed adversary of his own company, Sun Microsystems.

The Revolution That Scott And Larry Made

One of McNeely's first converts in the NC crusade was fellow Bill Gates-hater Larry Ellison, CEO of Oracle Corp. Although Oracle was committed to collaborating with

Microsoft in the context of developing Windows versions of its database software, Ellison personally wanted to reduce Microsoft's industry clout, by any means available. The creation of the NC alliance seemed a golden opportunity to knock Bill off his throne.

In 1993, Ellison promoted the concept of a "US\$300 computer," a networked computing device that would be cheap and simple enough to meet the needs of the global market in a way that the PC couldn't.

At the Oracle OpenWorld conference in 1996, McNeely and Ellison introduced the first of the third-party Network Computer prototypes, including the Sun JetStation and an NC from RCA and Thompson. Ellison subsequently helped organize Network Computer Inc. — intended as the spearhead of the NC alliance.

Ellison in particular was a tireless promoter of NC Inc., personally demonstrating



products such as the NC Network In The Box, a plug-and-go server designed to allow an NC network to be set up and connected even by a technical novice. NC Inc. develops software for server and consumer NC applications, and helps to coordinate the activities of third-party NC hardware manufacturers.

Redmond Strikes Back: The NetPC, Zero Maintenance And TCO

Microsoft first responded to the rise of the Internet by launching a "small Gears" initiative: "the Web is a joke" comment. Then the software giant sought to own a Linux-like, Microsoft has been simultaneously

controversy of the NC and Java, while working frantically to incorporate its new competitor's good ideas into the Windows OS and into its alien PC hardware.

Microsoft has devised a 'zero maintenance' standard for networked PCs, as well as a 'NetPC' standard for non-network PCs with sealed cases (designed to keep end-users' sticky fingers out of the PC's innards to avoid expensive configuration mistakes).

Fortunately for Microsoft, the continuing drop in the cost of PC components has meant that the '5500 computer' retains a reality in the Windows PC clone market before it did in the NC market.

Check any computer ad section in a U.S. newspaper, and you'll find PC configurations based on 'last year's' components (such as Pentium 55MHz processors, 1X CD ROM drives, and a 1GB hard drive) selling for blowout prices around US\$300. The equivalent is to be seen among Canadian readers for about \$700 or less.

Microsoft's strategic direction is to integrate the Web browser interface into the next release of the Windows OS, and to adopt the HTML Web document standard as the basis for its formats on the PC. Both these moves will help make the PC a more standardized and automatically Internet-friendly appliance. Microsoft's major PC manufacturing partners, such as Compaq and IBM, are building automatic network connectivity and management features into their business desktop PC lines, as discussed below. In many respects, the goals of the NC are being realized on the PC without sacrificing the PC's enormous software base, or requiring the adoption of yet another computing platform with all the training and other costs that implies.

NCI: Products, Projects And Vision

The NC camp has also been busy. NCI's current initiatives include software for Enhanced TV, a step beyond the WebTV model that Microsoft is developing. NCI's Enhanced TV technology allows users to personalize a blend of Internet content and interactivity with the traditional TV. NCI is working with partners such as RCA/Thompson to promote the adoption of NC hardware in business and consumer markets. RCA/Thompson claims that sales of its NC this clients have exceeded projections, and claim that they will see even more rapid growth in 1998.

Corel, Java And The Video NC: A Cautionary Tale

One of the earliest and most vocalized

for network PCs.



believer in the NC's potential was Canada's Corel Corp. Originally one of the first and strongest proponents of Microsoft Windows with its Corel DRAW graphics program, Corel 'jumped ship' on its status as one of Microsoft's most favored partners when it acquired the WordPerfect line of business applications, and consequently announced its faith in Java and the NC.

Initially professing that Java computers would grow to outnumber Windows PCs within a very few years, Corel's attempt to define the Java business software market with a Java office suite came to nothing, as the software proved impossible to complete in a usable form. A new Corel company — Corel Computer Corp. — announced a Video Network Computer product, a thin client device selling for about \$600 that was designed as a cost-effective alternative to the PC.

So far, Corel's expectations of 'hypergrowth' opportunities in the Java and NC market haven't paid off, understandable given huge amounts of money and R&D talent, and diverting resources away from Corel's core software line, which are under heavy

pressure from a host of powerful competitors, including Microsoft and Adobe.

Far from achieving 'hypergrowth' anytime soon, Corel now hopes that its new network computing offerings, including new server software products, will at least ensure it is profitable. Corel's experience provides little incentive for other major players to 'bet the farm' on the NC.

IBM: The Best of Both Worlds?

IBM has been an advocate of the NC and Java since the movement's early stages, but perhaps due to disappointing experiences with OS/2, as well as success in the Windows/Intel PC market, it is pursuing an exclusive dual-platform strategy. For IBM, it's not a question of NC or PC but rather NC and PC.

On the NC side IBM's existing customer base includes over 30 million dumb terminal users, and



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IBM regards this vast installed base as prime candidates for upgrading to Internet-capable, but cheap to deploy, NC thin clients. According to figures provided by IBM, industry analysts such as the Gartner Group, IDC and Jupiter Communications see a gathering momentum in the NC movement, which IBM is uniquely poised to exploit. The Gartner Group claims 40 per cent of large corporations plan to deploy at least some NCs by 1999, and 60 per cent plan to have them by 2001.

Another market analyst, Jupiter Communications, is predicting 16 million NCs in use by the year 2000.

According to Bob Dies, general manager of IBM's Network Computer division: "Our customers have discovered this year that network computers are a cost-effective choice for a surprising range of everyday and sophisticated business functions. Their enthusiastic adoption of this technology has put IBM squarely in the market's leadership position, and confirmed that network computers are here to stay. Our latest offerings will expand the market place even more in 1998."

In conversation with CCRW, IBM Canada's manager of NC products, Neil Patterson, claimed IBM has sold 100-600 units of its existing NC line (consisting of the 100, 300 and 1000 models)—making IBM the leading NC vendor worldwide. According to Patterson, IBM is not motivated by "bill baited," but rather sees an opportunity to provide a computing solution requested by customers who need a highly managed, centralized computing environment.

IBM had at one point decided to build a NetPC for the business market, but was told by many customers that they wanted NC-like network management built into full function fully flexible business desktop PCs. In response, IBM has integrated network management technology on its business PCs, with features such as automatic "Wake On LAN" and remote management and diagnostics capability that allow IT managers to more efficiently run a PC network.

Nevertheless, IBM says it expects "explosive" growth in both NC and Java over the next several years. Lately, an IBM-owned company, has developed an interesting suite of Java business applets, which may attract some mainstream business customers to the NC platform.

Of all the NC brands, IBM is

uniquely able to scoop up most of the potential NC hardware business, and to leverage its NC expertise to develop the Windows PC into an NC-like, low-cost networking computer.

Compaq: PC For Me, See?

Compaq, the world's largest PC maker, and the dominant player in business desktop PCs in Canada, looked at the same information on the NC as IBM did, but came to its own conclusions. After some mulling on the benefits of a 138600 computer, Compaq's party line became unequivocally focused on the Windows PC.

According to Peter Bassani of Compaq Canada, a conversation with CCRW, "We investigated the NC and the NetPC, and came to the conclusion that as a replacement for dumb terminals, the NC might eventually amount to 10 per cent of the computer marketplace. As for the NetPC, our customers want all their business computers to meet NetPC standards."

Compaq actually offers a scaled-down, fully compliant NetPC product—the Desktop 4000M, which "works modestly," according to Bassani. However, as with IBM, Compaq's customers have responded avidly to NetPC technology being incorporated across the entire Desktop 2000 and 4000 lines. Enhanced manageability, control and security features, the ability to configure PCs remotely from the server, and to "Wake On LAN" are all features of current Desktops, and help drive the down total cost of ownership. In the future, says Bassani, PCs will

become even cheaper to administer, with features such as enhanced Plug and Play, Universal Serial Bus and the Device Bay standard for modular adding and removing of drives, each helping to drive costs down.

As for Java, says Bassani, "Its future is an interesting question. They have to fight the big guy (Microsoft), and I don't see any critical mass for Java yet."

And the Winner Is...

Readers interested in making quick sales in the NC and Java market would be well advised to talk to their customers extensively before making a strategic commitment to the new platform. IBM probably has the best shot at handling both the short-term opportunities in the NC. Any other NC vendor is probably much more of a long-shot.

The market for cheaper, more manageable business PCs, servers and networking solutions is immense—likely to experience steady growth and offer the most chance for success in 1998 and beyond. ■

Contacts:

Compaq — <http://www.compaq.com>
 Corel — <http://www.corel.ca>
 IBM — <http://www.ibm.com/canada>
 NC Inc. — <http://www.ncinc.com>
 Oracle — <http://www.oracle.com>
 Sun Microsystems — <http://www.sun.com>

Jeff Evans is Associate Editor of Canadian Computer Wholesaler. He can be reached at jeff@ccw.com.



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NCs Get E.D. Smith

Out Of A Jam

by Paul Lane

On a property in Watson, Ont., stands a stone house surrounded by the E.D. Smith farm. This house is the homebase of Eamon D'Saeth Smith and, at one time, served as the office from which he directed his fruit growing and shipping enterprise.

From those humble beginnings grew E.D. Smith & Sons Ltd. While the company is flourishing, it has found itself in a bit of an information processing jam. Not regarding flow-of-information, but rather cost-of-processing.

Like any corporation that relies on the processing of information to fuel sales, marketing, production and distribution decisions, E.D. Smith has seen the total cost of computer ownership increase steadily over the last decade even as the cost of personal computers has fallen.

The reasons for the increases are two-fold, according to Rev. Russell, director of information systems. The company has had to put more computing power in the hands of more people who rely on data analysis for decision making and, to share data within and between departments, the company has had to network its computers. "It's not so much the cost of purchasing computers, but the cost of managing networks, upgrading operating systems and software on desktops that

is getting out of hand," says Russell.

To lower the cost of computing, Russell already uses text-terminals in production areas where full PC power is not required and where PCs would not serve the sticky environment. But she wanted to give employees access to graphical data and is setting up an Intranet to improve the data sharing.

Text-terminals wouldn't cut it, so she investigated the feasibility of network computers (NCs) in the production area and in other departments where the full computing power is needed. The end result? E.D. Smith is running an NC pilot project and is on track to install 100 NCs from IBM Canada over the next 12 months.

Once the NCs are installed, they will represent close to 50 per cent of the computing devices connected to the company's AS/400 server. Rather than installing operating systems and new software on each NC, the NCs will run applications (such as Lotus

SmartSuite for Java, expected on the market by year-end) from the server.

"This will reduce the cost of rolling out software and it will simplify the administration of the network," says Russell. While NCs will not replace every PC, she says there is a cost-effective solution when

highly deployed.

A recent study on the use of IBM

Back To The Future

by Paul Lane

In 1998, 77 per cent of North American and 92 per cent of European companies will use networks, according to International Data Corp. (IDC).

Network collaboration and data sharing began strictly run by powerful servers may seem like a return to centralized days of mainframe computing, especially since many users will be working on network computers (NCs) that look more like mainframes, but terminals rather than PCs. But it's not a case of "Back to the future," according to IDC.

While NCs include text terminal emulation capabilities, they represent the future because these low-cost desktop devices provide a bridge to Internet/Intranet-based applications.

"It's not a regression," said Paul Petersen, national marketing manager, network computer or business unit, IBM Canada Ltd. "We're increasing our customers' ability to manage the desktop environment without compromising the functionality that end-users have today — giving more people access to computing power, the Internet and networks." IBM has more than 100 NC pilot projects in place in government, health services, education, retail, media, finance and other sectors.

When it comes to NCs, proponents claim they will reduce the total cost of computing in distributed environments. Opponents say they are not powerful enough to be effective. Proponents and opponents have competing NC strategies.

San Jose/Silicon Valley, IBM Corp. and



network stations conducted by International Data Corp. (IDC) supports Russell's conclusion. IDC claims NCs are slightly more expensive to use over five years than text terminals, but "the access to a wider range of network and Internet-based servers and applications" justifies the increase.

The study notes that PC costs vary according to the number of users, workload, location and network type, and concludes NCs represent a more cost-effective migration path for text terminals running production applications than for PCs. But it cites a 46 per cent savings for older PCs used in business processing.

"The 46 per cent difference between IBM Network Stations and PC clients may be a compelling reason to consider this less expensive alternative than upgrading to current PC technology," the study concludes.

Ned Peterson, national marketing manager, network computer business unit, IBM Canada, says IBM's strategy for the desktop includes network stations for highly-centralized applications and PCs and workstations for power users. "There are many environ-

ments where a net is appropriate, but prior to network computers, the only option was to go full-blown PC," says Peterson.

While he says IBM is committed to Java, network stations are not tied to Java. Even so, IBM is introducing "a fairly sized Java machine."

As for Russell, she can't wait to spend NCs across the company. She has an NC and a 300MHz Pentium running Windows 95 connected to the same service, and says the NC boots up just as fast as the Pentium. While it takes more time for the NC to retrieve software from the server than it takes the PC to open applications, Russell points out that NCs are in their infancy. "Technology changes rapidly."

To speed the rapid change, IBM has 3,400 programmers developing Java applications and has introduced its Secure-1000 network station that will run Java apps much faster than its current NCs. ■

Paul Lima is a Toronto-based journalist who specializes in high-technology reporting. He can be reached at plima@direct.com.

others have announced Intel-free, Windows-independent PCs. Microsoft, Compaq and others have announced lighter Weight (Windowsless) network computers that will also run Java apps.

The WinIt strategy seems to be to drive the price of a PC below the \$1,000 mark, providing stiff competition to backers of the NC concept. However, acquisition costs represent only 50 per cent of the total cost of PC ownership, according to Gartner Group studies.

Richard Marchese, president of Toronto-based Marchese & Associates, describes NCs and their clients as "the concept of the dumb terminal updated for the 20s" and predicts it may take a year or two to determine how well the clients will do. "There will be some initial experimentation because the cost savings can look very attractive," he warns, however that savings may evaporate "if it turns out the clients can't do the job."

Either the NC or network PC concepts take off, it will once again mean thinner hardware margins for resellers. But it will also increase the number of hardware units shipped and the type of value-added services resellers can offer as network and transmission companies discover they can put computing power on more desks for less. ■

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It's All Fun And Games!

Sequels and interactivity are hot commodities going into 1998.

by Alan Thrush

Call it the Year of the Sequel. Better yet, how about the Year of the Power Sequel?

Computer gaming is a strong, no-nonsense power source for more of the stuff they love, and new games are entering the field on a weekly, if not daily, basis. For all the intensest modern boys about Elvonnore and herwise wars, you might be forgiven for believing that gaming drives the computer industry. If you don't believe it, ask a gamer — and be prepared to sit back and relax!

That said, gaming broke through more relatively meagre in 1997. Nothing on the order of *Myth* or *Doom* seemed to make gamers love for loved new experiences. But the sequels were strong in almost every



genre: real game (that is) continued to build on previous words and past strengths — action (especially action action) and superb graphics continued to captivate gamers everywhere.

All of the goodies that came so much to the power (and sometimes less full confidence for developers) — great graphics, lots of movement, two-dimensional affairs — are with us again for 1998. They come at a price, though, as gamers need to carefully



consider what's going on their desktops. More than ever before, computer gaming means computing power.

The World Of Games

One of the biggest arrivals in late 1997 was *Bruderband's Raven*. It's the sequel to *Myth*, which heralded the arrival of a new kind of computer gaming: *Myth* was released in late 1993, and has become pretty famous for changing the rules of gaming. Its nonlinear game play, first-person point of view, and rich graphics set the stage for an entire genre of computer entertainment. *Bruderband Software* claims that *Myth* is the best-selling computer game of all time.

Raven continues the tradition with a complex world with reclusive inhabitants and a myriad of pathways to explore. *Raven* contains three hours of animation, two hours of music and sound effects, and immersive, multi-track sound. If games — and those new to gaming — look to *Raven* the way they did to *Myth*, there'll likely be more games that are non-violent, require heavy-duty puzzle-solving, and offer stunning graphics to bewitch gamers. Something to look forward to!

Raven isn't the only sequel. *Baldur's Gate* and *Tomb Raider II* from its superb action/adventure genre featuring visually-clad heroine Lara Croft. Microsoft's *Flight Simulator* (back in what Microsoft calls its most significant upgrade ever: The FS hangs new tasks right around, with newcomers including the Bell 206B



there's one simple caveat: neophyte gamers should keep in mind

(This warning also applies to veteran gamers who are upgrading to new versions of their favorite software.) In a word: power. To keep *Link LS 98's* pin flags flaring in the breeze, to hear the sound of the *JetRanger's* engines howling in *Flight Simulator 98*, and to enjoy the wondrous graphics of *Raven*, your computer must have power and sophistication. We're not in DOSland and anymore, folks, and that means

gamers may be able to run great game software with less, but they won't be getting all the benefits the developers built into them! A 90MHz Pentium chip is considered the absolute minimum for today's games, but even that can be choppy with power-hungry products. A MMX-enhanced processor will make all the good moves move well (MMX adds a set of 57 extra instructions to Intel's Pentium for supporting complex operations on multimedia and communications data functions). And, of course, you'll need a 3D graphics card. (Note the system requirements on the game box to see if your 3D card is supported — there's a standard organ for rigging among manufacturers of 3D cards.)

The last trend to note in the World of Gaming is that it's no longer cool to play by yourself. In 1996, "plays well with others," could well be the ultimate accolade for gamers and their computers. Interactive is the operative word here, and the Internet isn't far behind. That means more fun for gamers — because interactive on-line gaming means lots more people to game with — but it will also mean escalating power requirements as individual gamers struggle to up their access speeds to near those of the games servers storing the connections.

Where's it all going? Without a doubt, to more of the same. Better graphics, more enhancements, bigger power requirements — but, more than anything else, much, much more fun! ☺

Alan Thibault is a freelance journalist who specializes in mobile computing and on-line technologies. He can be reached at alan@jpcnet.com.

Ingram Micro Canada's Top 10 Games

(based on November '97 sales)

Rank	Vendor Name	Product Description	Web Site
1	Bruderband	Raven	http://www.brunderband.com
2	Enix	Tomb Raider II	http://www.enixinteractive.com
3	Microsoft	Flight Simulator 98	http://www.microsoft.com/games
4	Lucas Arts	Jedi Knight: Dark Forces II	http://www.lucasarts.com
5	Lucas Arts	Curse of Monkey Island	http://www.lucasarts.com
6	Mindscape	Parper General II	http://www.mindscape.com
7	Accusa	Links LS 98	http://www.accusa.com
8	Actionman	Heavy Gear	http://www.actionman.com
9	Microsoft	CART Precision Racing V10	http://www.microsoft.com/games
10	Lucas Arts	Archives '96 II	http://www.lucasarts.com

"In 1998, 'plays well with others' could well be the ultimate accolade for games and their computers."

JetRanger II helicopter, the *Crescent Skyline* HES, and the *Leviat 45* joining FS veterans *Crescent Skyline* HG, *Enix 300B*, *Boeing 737-400*, the *Salvatore 2-32* sailplane, and a *Sopwith Camel*. New maps and sounds round out the FS picture. Another game on the "new and improved" list is *Links LS*, from Accusa. In the '98 version of *Links*, there are a total of six animations available: six play modes (including new scramble and alternate shot formats) and up to eight camera windows, including the *Golfier Cam*, *Pro Cam*, *Golf Cam*, *Linking Cam*, and *Putting Cam*.

Impressive is the new offerings are

that the stakes have been upped considerably, in most cases. Lucas Entertainment's *Jedi Knight: Dark Forces II* continues its successful run, led by new release *Jedi Knight: Mysteries of the Sith*, a collection of new computer missions featuring 39 cameras to single and multi-player levels and a compelling new playable character — *Mara Jade*, a former covert agent for the Galactic Empire.

Here's what your customers are going to need (note that these are recommendations —



The Guts And The Glory Of A Good Game

by Sean Carruthers

Recently, I went on a journey to faraway places. My first stop was a beautiful, nearly deserted island full of mystery and magic. I wandered for hours, looking at the scenery, and going for rides to rainbows and flying devices. Occasionally I'd even find a puzzle to solve along the way. Next, I hopped on to a spaceship and shipped out to a faraway planet, where I discovered that things had gone horribly wrong! Instead of a resort hotel, I found an installation overrun by mutants and aliens, and I was the only one who could save the day! Stocking up on supplies and ammunition, I headed into the heart of the installation to set things straight.

I was playing by picking up two of the hottest computer games of the season, *Riven* (CyberReal Orb Entertainment — <http://www.riven.com>) and *Quake II* (Id Software — <http://www.idsoftware.com>).

So, what makes a game hot?

Familiarity

Some of the hottest recent PC games are sequels to earlier games. *Riven* follows in the footsteps of one of the most popular games of all time, *Myst*. When it was first released, *Myst* took the software market by surprise and by storm, immersing the player in a world of detailed graphics and problem solving. *Riven* continues in this vein, adding more graphic depth and still more problems to solve.

For its part, *Quake II* is very much of a kind with previous games from Id Software, being a technical sequel to *Quake*, but this time out incorporating more of the feel of their most successful hit, *Doom*. Also available from Id is the follow up to the popular *Haze* — *Haze II* (<http://www.idsoftware.com/haze2/>).

Other popular games have incorporated worlds from other media — most notably *Star*

Trek and *Star Wars*, both of which have spawned a number of popular software titles. The newest of the *Star Trek* games is *Starfleet Academy* (Interplay — <http://www.interplay.com/starfleet/>), a simulation game that takes you through basic training, and then out into space! This follows other popular titles, like *Star Trek: Borg* and *Deep Space Nine: Harbinger*.

In the *Star Wars* universe, one of the latest offerings is *X-Wing vs. Tie Fighter* (LucasArts — <http://www.lucasarts.com/>), a space shoot-em-up between the forces of good and evil. The *Star Wars* titles *Dark Forces* and *Shadows of the Empire* have also proven to be good sellers.

Simplicity

Although there is always a market for more intense strategy games, or simulations that require a grasp of a number of disparate skills, by far the most popular games are the ones with a simple concept and a minimum of controls. This probably accounts for the massive popularity of point-and-shoot games like *Quake II*, *Doom* and *Duke Nukem 3D* (3D Realms — <http://www.3drealms.com/>). After a hard day at the office, the last thing someone wants to do is spend a long time trying to figure out how to play a game. It's worth noting that two of the most popular games of all time are *Tetris* and *Pac-Man*, a would-be difficult to get simpler than this.

Action/Adventure

Although the gender percentages have shifted more towards the centre recently, most of the regular game fans are younger males, and consequently a good chunk of the most sought-after games are action or adventure-oriented. This means fast-paced games (with either shooting or driving, for example), games with guns, blood and gore, and adventure games where the player goes! where no one has gone before. *Tomb Raider II* (<http://www>



www.interplay.com/) has a lot of both, and the added twist of a female as the main character.

Networking Ability

Another thing worth watching out for is the ability of games to be networked. Part of the popularity of games like *Quake* and *Duke Nukem* has been the ability to play against other players, either on a local area network, or over the Internet. This ability is becoming an even bigger draw in the near future, as more and more people become used. In fact, some games are being aimed directly at the networked world, such as *Ultimate Online* (Digital Eclipse, Inc. — <http://www.digitaleclipse.com/>), which extends the Internet Multi User Domain concept past text-only and into the graphic realm.

Souped-Up Graphics

For gamers, one of the biggest advantages of the new generation of ultra-fast processors is the ability to display high resolution graphics, or simulate a three dimensional environment in real-time. The major downside is that, as faster processors are introduced, many older machines don't meet minimum requirements for some of the newest and most popular games. Of course this could be a good selling point for system upgrades!

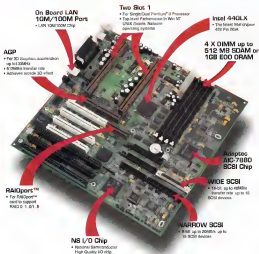
Now, back to the alien invasions. I have a few more levels to clear of monsters and mutants. ☐

Sean Carruthers does Web consulting for Amstar Airframe Computer Services (<http://www.amstarweb.org/>) in Brandon, Man. He can be reached at sean@amstarweb.ca.



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CD-R Drives:

The Next Generation Is Here

by Steve Halade

One of the most exciting advancements ever in the world of data storage was the creation of the personal CD recorder. When these devices first began to appear on the market a few short years ago, they seemed almost too good to be true. Imagine being able to write data or music to the very same medium which contains your favorite music, and being able to play it back on your favorite CD player or your PC's CD-ROM drive!

Well, the good news is we no longer have to imagine it because it's right here and demonstrated to stay. The first one or two CD-R (CD-Recordable) drives to hit the market a few years ago were only available to large corporations or made famous because of their exorbitant high costs — several thousand dollars. The average consumer could only browse the advertisements and dream of the day when these same devices would come day by day in stores in their very own personal computers which they use on a daily basis. Indeed, the last three or four years have seen the dawn of some incredible advances made in the computer industry. This month, we're going to focus on the CD-R and its successor, the CD-RW (CD-reWritable) drive.

It's only been a little more than a year now that CD-R drives have come down in price to the point where the average consumer could afford one. And, as always, thanks to the wonderful world of competition, the consumer is now offered not two or three, but a vast number

of different choices when stocking an outfit CD-R drive to buy. Most seem that are looking to buy a CD-R or CD-RW drive tend to be fairly knowledgeable about computers as a whole. That is to say, they don't fall into the "beginner" category, but rather into "intermediates" or even "advanced." That is just as well, because CD-R technology, despite having come a long way in the last few years, is still not foolproof. Although the manufacturers would have us believe that anyone can operate these devices with their eyes closed, our experience using a large variety of drives over the last year proves otherwise. About a year ago, when the CD-R market really began to heat up, the blank disks would cost anywhere from \$9 to \$14 each. That may not seem like much when you consider that one of these disks can hold 69MB of data, but when you end up losing two or three disks per week because of recording errors, it adds up very quickly.

The software which often accompanied the early model drives was anything but user-friendly to say nothing of available. Combine that with the fact that the early model CD-R units had a very small (often 32KB or 64KB) buffer, and many errors were the order of the day.

So what's a better, and why is it important? The better is the CD-R drive is quite simple — a small amount of RAM where data is temporarily stored. The way a CD-R records

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data onto a disk is quite different from that of a hard drive or floppy drive. When the laser inside a CD-R drive is powered on, it must continue writing data in a continuous manner until the particular session, or perhaps entire CD, has been completed. When the writing process first begins, the CD-R drive requests that the data be given to it from the source drive, which can be practically anything: from a CD-ROM drive, a floppy, hard drive, or zip drive. The data goes into the CD-R's buffer where it is stored until the laser is ready to write it. The problem occurs when the source drive from where the original data is stored cannot send the data to the buffer fast enough. If the buffer in the CD-R should ever get empty, the laser has no data to write, thereby causing an immediate error, most commonly referred to as an "underrun." There are two possible solutions: get a faster drive, which supplies the original data, or increase the buffer on the CD-R drive so that if the source drive should become unavailable for one or two seconds, the buffer in the CD-R would still contain data. The new breed of CD-R and CD-RW drives now have 3MB of buffering capability. Although this may not seem like a large amount, it does wonders by greatly reducing or even eliminating buffer underrun errors.

The other key factor in minimizing the amount of customer time makes them their blink disks is having good software. Poorly written software can be just as bad, if not worse, than having a drive with a small buffer or an under-equipped system. If the software hasn't been thoroughly beta tested with a large number of drives by a large number of users, chances are it'll cause problems at some point or another. So how can you tell the good from the bad? What advice can you give to your customers to better ensure they get reliable performance from their CD-R unit? The good news is that today we don't have to do a lot of guesswork and hope for the best.

Consult Newsgroups

You and your customers should spend a short amount of time reading the appropriate newsgroups. Here you will find virtually an unlimited number of shared ideas and experiences being passed around on a daily basis. The discussions are frank, to the point, and unbiased. If someone has something good to say about a particular software package, it'll get said. Likewise, if several people report that a certain piece of software caused them to end up with a handful of CD counters, it'll be known around the world in just a matter of hours.

The most popular choices today for CD-R software are Adaptec's Easy-CD Pro 2.11 and Easy-CD Creator 3.01, as well as Eidosmen's Gear 4.02. Each has their own pros and cons,

but all three offer a set of good features, usability, and stability. Depending on the CD-R drive, the software may or may not be included with the package. It's definitely in the customer's best interest to buy a drive which has the software included because some software packages can easily cost \$250 or more.

The New Breed

The latest developments in the world of digital storage have given rise to a new breed of CD-R drives known as CD-RW (CD-Rewritable). These drives use phase change principles to accomplish their tasks, the same as those found in Panasonic's PD drive. Although the PD drive was a striped drive and had a lot of potential, it didn't catch on mainly because of its high media cost (around \$10 for a PD disk) as well as its incompatibility with any other drive. The new CD-RW drives, however, don't have these problems. First of all, the media costs are nearly one third of what a PD drive would cost, and this is now, when the technology is still new. In the coming year, the blank CD-RW disks are sure to go from the current \$10 per disk to around \$10, perhaps even lower.

Combine that with the fact that you can also write traditional CD-R music and data disks on the same drive which can then be read back on any CD-ROM drive or CD player, and you can instantly see why CD-RW will be an instant hit. Not only will it catch on, but we'll go on to be the choice of money for both CD writing, as well as for system backups.

One of the most attractive features about CD-RW is the fact that you can rewrite a disk up to 1,000 times before the chemical bonds, which make up the disk well begin to lose cohesion. But because they can be written to and erased using packet-writing technology, they are an ideal choice as a backup drive because they offer high-speed random access reading — something which sequential tape drives desperately lack. These new drives are available in both IDE and SCSI versions, both internal and external and don't cost nearly as much as most people thought they would when they first appear.

The Drives Reviewed

We asked manufacturers to provide us with their very latest CD-R or CD-RW drives. We wanted to get an idea of what's out there, how much it costs, and what sets one drive apart from the rest. We compared the drives to each other on the basis of price and overall features. Because CD-R drives are not something that can be conventionally benchmarked such as some systems or hard drives, there were no formal tests done on these units. Instead, the top two drives in the survey were chosen based solely on their overall value.



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Interface	7100: EIDE	SCSI	SCSI-2
	7100a: Parallel		
Loading Mechanism	Tray	Tray	Caddy
Max. write speed	2X	4X	4X
Max. rewrite speed	2X		
Max. read speed	6X	4X	10X
Access time			165 ms
Supports packet writing	Yes	Yes	Yes
Buffer size	1MB		1MB
ATA/MTBF (hours)	150,000		50,000
Blank media included	1 CD-RW		2 CD-R
Software included	Adaptec DirectCD Easy-CD Audio CD copier Jewelcase designer	Archiver for Windows Audio track copying CD copy utility JVC CD-R Extensions	Adaptec Easy-CD Pro
Contact	1-800-387-3807	1-800-667-1089	(714) 295-3000
Internet Contact	www.canada.hp.com	www.forest.com	www.pinnaclemicro.com
Price	7100: \$657 7100a: \$800	40X internal: \$1115 SRP 40X external: \$1250 SRP	BCD internal: \$875 BCD external: \$900

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2X			2X
6X		6X	6X
320 ms		350ms	250 ms
Yes		Yes	Yes
2MB		512KB	2MB
50,000		100,000	Undetermined
1 CD-RW, 1 CD-R		1 CD-R	None
Adaptec Easy CD Creator Deluxe Adaptec DirectCD and writing for more		Adaptec Easy-CD Pro	Adaptec DirectCD
1-800-543-6038		(416) 488-3416	(416) 298-1311
www.sony.com		www.sony.com	www.yamahaysi.com
CD-RW 426 ret. \$750		\$475	\$550
CD-RW 426 ext. \$870			





Sony Sprezza 828E

No stranger to the world of data storage, Sony has recently unveiled its latest CD-R unit, the Sprezza 828E. This drive has a number of interesting features and is available in three different flavors — known as the 828E/C, 828E/C, and 828E/H. The 828E/C is designed for OEM integrators, and does not include the Sony logo on the bezel. The other two versions, the C and H models are both retail drives with the C version aimed at corporate levels, while the model H is tailored for SOHO users.

Both the K and C models are bundled with Adaptive DirectCD Pro 2.1 mastering software, while the 828E/H version includes only the required Adaptive DirectCD drivers to allow packet writing for drag-and-drop use under Windows 95. One of the most interesting features of this drive is its disk recovery ability. This allows the drive to recover from a previous recording session interrupted as a result of an error. Sony's disk recovery system gives the user

the ability to resume the recording from the point where it was interrupted. The Sprezza 828E is a great choice for someone with an aging double or 4X CD-ROM looking for an upgrade. Sony feels its drive is an ideal choice because it not only gives the users a drive capable of reading data at 8X speeds, but also gives them the ability to create their own CDs at 2X speeds. The drive uses an IDE interface, which allows for simple installation into any PC. Although the Sprezza 828E has a fairly low street price of around \$435, its small 512KB buffer leaves very little room for mistakes. This means that the hard drive which is used to deliver the information to the CD-R must be a recent model and able to deliver that data at a high transfer rate. The drive also comes standard with a blank Sony CD-R disk, a CD cable and an audio cable.

Contact: (416) 499-1114,
<http://www.sony.com>

Sony feels its drive is an ideal choice because it not only gives the users a drive capable of reading data at 8X speeds, but also gives them the ability to create their own CDs at 2X speeds.

Yamaha CRW400E and CRW4260

One of the most popular CD-R choices among consumers today are drives from Yamaha. Yamaha's latest offerings are the CRW400E and CRW4260, the first being a standard CD-R unit, while the latter is a new CD-RW drive. Although each drive is specifically designed for certain applications, they both offer excellent performance, features and value. The 400E can read data at 8X speeds, while writing to CD-R media at 4X. In essence, the CRW4260 can also read data at 8X, and write to CD-R at 4X, but writing to the new CD-RW disks is limited to 2X, as are all other CD-RW drives currently on the market. Both drives comply with the usual standards, both support packet writing and both

have a generous 2MB buffer to minimize the chance of underburn errors. The drives use a SCSI-2 interface to communicate with either a Mac or PC. Yamaha sells these drives in OEMs as the bare unit, and gives them the option of either selling the bare drive to their customers, or to bundle with a SCSI card and software. Included with the bare drive are Adaptive DirectCD drivers for packet writing under Windows 95. The average street prices for the CRW400E and the CRW4260 internal units are \$350 and \$460, respectively. An external version of either drive is sold for around \$480 more.

Contact: (416) 298-1111,
<http://www.yamahayc.com>

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Smart and Friendly CD-RW 426 Deluxe

If it's true that people buy certain products because of the name, then the drives from Smart and Friendly could very well be the next best-sellers. The new CD-RW 426 Deluxe is the latest in Smart and Friendly's lineup of CD-R and CD-RW drives. It's available in both an internal or external version, and uses the familiar IDE interface to connect to your PC. The 426 Deluxe is capable of reading data at up to 6X speeds, while writing to CD-R at 4X and re-writing to CD-RW at 2X. Although the drive does not use a SCSI interface, the large 2MB buffer will go a long way towards preventing any kind of errors that may otherwise occur with an smaller, inadequate buffer. With support for packet writing plus all of the major recording standards, this drive is sure to please nearly everyone, especially considering the generous amount of software included with the unit. The even-popular Easy CD Creator Deluxe edition from Adaptec is

bundled with the system, which features every possible utility one can think of to do nearly anything imaginable with a CD-R drive. You get CD Spin Doctor to mix and match your favorite tunes onto CD-R, Video CD creator, and PhotoCD creation, to name but a few. Adaptec's DirectCD is also included to allow for drive-letter access to the unit from either DOS or Windows 95.

Other software titles included are the Smart and Friendly CD-R Disk Jockey and Custom Labeling System, MusicMedia Backstage Designer Plus, MediaPath Technologies MediaAgent, and ECI Disk Inspector Pro. Aside from the ton of software, you also get two blank disk media: one CD-R and one CD-RW. Estimated street prices on these units are \$750 for the internal version and \$870 for the external unit.

Contact: 1-800-342-8838
<http://www.smartandfriendly.com>

The Smart and Friendly 426 Deluxe is capable of reading data at up to 6X speeds, while writing to CD-R at 4X and re-writing to CD-RW at 2X.

Hewlett-Packard SureStore CD-Writer Plus 7100

One of the first manufacturers of consumer-oriented CD-R drives was Hewlett-Packard — roughly two years ago. Since the company's very first models rolled out of the manufacturing plants, HP has been continuously working on improving its drives by implementing all of the latest features while trying to keep their prices very competitive. As of late '97, HP discontinued the manufacturing of its previous generation of 6000 and 4000 model drives which were able to write strictly to CD-R media. The latest offering is the 7100 series which is available in both an internal IDE (model 7100i) and an external parallel version (model 7100e). These drives support both CD-R (CD-recordable) and CD-RW (CD-rewritable) standards. A unique feature on these drives is their ability to produce CDs which can be read on DVD-ROM,

CD-R, and CD-ROM drives thanks to HP's own Multisession compatibility. Both drives include a generous supply of software such as Adaptec DirectCD, Easy-CD Author, CD Copier and Jewel Case designer, plus one blank CD-RW disk. The internal version includes an IDE data cable, while the external model includes a parallel cable, audio cable and power supply.

Both drives comply with all of the major standards such as Red Book, Yellow Book, Green Book and Orange Book and support packet writing. Each drive has a maximum 6X reading speed, and 2X writing speed. The average street prices on the internal and external models are \$550 and \$695, respectively.

Contact: 1-800-387-3667
<http://www.canada.hp.com>

Pinnacle Micro RCD 4X12

If there's one company that knows all about CD-R drives, it's Pinnacle Micro. Having been there from the very beginning, drives bearing the Pinnacle name were often looked upon as the standard and the one to beat. Their newest creation in the world of CD-R is the model RCD 4X12. Using the very latest technology, this drive complies with all the major standards and supports UDF and packet writing formats. The RCD 4X12 has a maximum writing speed of 4X (4000 KB/sec) and a maximum reading speed of 12X (1800 KB/sec). The drive uses a SCSI-2 interface and is available in both internal (PC only) and external versions,

making it an ideal choice for either Mac or PC platforms.

With its 1MB internal buffer, the chances of underrun errors are greatly eliminated. The internal version of this drive includes an Adaptec's 95C94 SCSI-2 controller and internal ribbon cable, and is priced at \$695. The external version comes with an external SCSI cable, and is priced at \$875. Both drives include two blank CD-R disks, a copy of Adaptec Easy-CD Pro 2.1L, and come with a one-year parts and labor warranty.

Contact: (714) 789-3666
<http://www.pinnaclemicro.com>

The 400t can read data at 6X speeds, while writing to CD-R media at 4X. Its successor, the CRW4260 can also read data at 6X, and write to CD-R at 4X, but writing to the new CD-RW disks is limited to 2X.

JVC Personal Archiver Plus 205 and 404

Another well-recognized name in the world of technology is JVC. Although its CD-R drives may not be as well-known as some of their other electronic products, they are, nonetheless, trying to hold on to their share of the CD-R pie. The two models available from JVC are both quite similar, with the major differences being their read/write speeds. The first drive has a maximum read speed of 6X and writes at 2X, while the second one can both read and write at 4X speeds. Both models are available in either an internal or external version. The internal version comes complete with an Adaptec 1501 SCSI adapter to let the user get up and running right out of the box. On the software end of things, there are a number of utilities included with the drives — such as an archiver for all versions of Windows, an audio track copying

utility, a CD-ROM copying utility and JVC's own CD-R extensions, which allow the user to use the drive as a standard drive letter for both reading and writing, and also allow for packet writing. It should be noted that the CD-R Extensions are available only for Windows 3.x and Windows 95. The suggested retail prices for the drives are as follows: 2x6 internal \$699, 2x6 external \$1,050, 4x4 internal \$1,615, and 4x4 external \$1,255.

Contact: Jansfont Graphics
 (JVC distributor for Canada),
 1-800-667-1089 <http://www.jansfont.com>
 or <http://www.jansfont.com>

Editor's Choices

Yamaha CRW4260



Smart and Friendly CD-RW 426 Deluxe

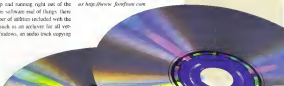
Yamaha CRW4260

The brand-new CRW4260 is yet another fine unit from Yamaha, and the perfect successor to the CD-R400 model. With its SCSI-2 interface, 2MB buffer and dual CD-R and CD-RW writing abilities, this drive has professional written all over it.

Smart and Friendly CD-RW 426 Deluxe

The CD-RW 426 Deluxe is an excellent package consisting of everything one would need to get started. The drive itself is impressive with its dual-writing capabilities to both CD-R and CD-RW, not to mention its 2MB buffer. That plus the generous amount of software included with this package make it a very attractive option for both the casual and professional user.

Steve Rivkine is Canadian Computer Weekender's Lab Test Editor. He can be reached at (416) 333-6494.



Canada's own Seanix gains U.S. recognition

by Michele McLean

Seanix Technology Corp., a Richmond, B.C.-based PC manufacturer, is proving itself to be a successful American business story. At the recent Comdex/Fall '97 show in Las Vegas, Seanix was the MVP 1997 Product Of The Year award for 386DX systems, sponsored by the American magazine, PC Computing.

"The best indication of how things are going (for us) is we've received six industry recognitions under awards which have coincided with the ones we got at Comdex," said Russ Graham, director of marketing for Seanix.

"The majority of companies that were in there are all one billion and larger U.S. dollar companies. So we were up against Compaq and Acer."

"We were just sitting there hoping like heck that we would win, but assuming that we wouldn't. Just being nominated and being recognized as having a good product and good packaging of our product was enough."

Seanix was also recognized by the *American PC World* magazine as being among the top 20 vendors for entry-level systems. With these accomplishments, Seanix is continuing to prove. This year, Seanix reported selling approximately 20,000 units in each quarter in Canada alone.

In April 1997, the company expanded into the U.S. The privately owned company claimed annual sales of \$160 million in 1997.

Seanix was founded by current CEO Paul Grand in 1988. Today, the company has offices in Edmonton, Calgary, Toronto, Quebec, Sioux City, Iowa, and Austin, Tex. The company employs approximately 180 people in Canada and 20 in the U.S.

Seanix designs, manufactures, customizes and services its computer products and systems. Product lines include consumer and business PCs, notebooks, servers, monitors and a variety of PC peripherals. Its most popular system is the Baby Grand, sold in the United States, and the Baby G, sold in

Canada — identical systems but differently named.

Business and consumer versions of both models are offered.

Seanix uses resellers for its distribution in Canada, but employs a direct sales approach in the United States.

"They're doing well," said George Bédard, manager of PC research for IDC Canada in Toronto. "They're one of the most successful Canadian-owned PC vendors. A lot of their business seems to be divided between the consumer, as well as medium- and large-sized business, so they're straddling both sides of the fence."

Graham said his Canadian customers are large and small corporate accounts, as well as consumers. In the U.S., Seanix customers are also consumers in addition to medium- and small-sized businesses. On the home front, "What we're finding is that the majority of buyers are consumers who already have computers," Graham said. "The majority of sales are to people buying a second or third system for their household."

But, in both countries, Graham credits price as the key to success for the Baby Grand and Baby G models. These systems currently list from US\$999 and \$1,499, respectively. "The [direct sales PC vendors] don't really have systems in this price point," he said. "Compaq has been making some noise with US\$799 and US\$899 configurations — both without monitors — but they're stilling in some of their retail organizations."

The Seanix consumer PC, the Baby Grand GS, features a pair of Audio-Lensing speakers and a sound card. It comes with Windows 95, a 24X CD-ROM, a 33.6K modem or the customer can choose to have a 16110Mbps Ethernet adapter card. The 14-inch monitor is included.

The Seanix business model sports a Pentium MMX processor, a 2MB video card, 1.6GB hard drive, floppy drive, MMIO RAM

and a 15-inch monitor. "There's no CD-ROM, no sound card and no speakers," said Graham. "It's a system that's designed to go into a network-type of environment. One is very network-centric and the other is a bit more stand-alone-centric."

With both models, Seanix can build to order. "We really believe in the quality of our product and we work hard to make sure that it is of the highest quality possible," Graham said. "We're an ISO 9001 and 9002-certified production facility. We have a 24-hour business in all of our systems."

Edison McMorris, president of Computer Rental Centre and PC Depot in Edmonton and Calgary, has been a reseller with Seanix for nine years. He believes Seanix products stand out among others. "Once I started dealing with Seanix I said good-bye to everybody else. Over time other companies either went out of business or their products became inferior. There was always something," he said.

"They build an excellent computer. With Seanix I feel like I'm getting a really high-quality product without paying top price for it. The product is excellent and the price is very competitive." ■

Michele McLean is a freelance journalist based in Toronto.





by Newswire

BSA's latest anti-piracy campaign targets small Hong Kong companies

Following a successful anti-piracy campaign against large organizations in Hong Kong, the Business Software Alliance (BSA), an industry watchdog, has turned its sights on small and medium-sized businesses in the Special Administrative Region.

While it is aware of software piracy in the business segment, the BSA says it was surprised by the seriousness of the situation, which was brought to its attention during its recent campaign against larger businesses. In its appeal for information, the BSA said it was contacted with calls on illegal software use within smaller businesses.

Fujitsu builds hard disk plant in Philippines

Fujitsu Computer Products Corp. of the Philippines (FCPP) says it will build a new US\$200 million hard disk media plant in the Philippines. The new factory will employ 300 people.

With storage capacity increases made possible by advances in Magneto-Resistive (MR) heads, demand for hard disk drives is rising fast, and the company. It forecasts world demand for hard disk drives will jump 33 per cent this year, and this growth, together with a potential shortage of drive media, has prompted the company to construct the new factory.

AmTelc lays fibre-optic cable in China

AmTelc, a developer of telecommunications projects in China, says construction of a fibre-optic cable telephony network in Hubei province is complete, and commercial operations have begun.

The network is a province-wide system in Hubei, a province of 65 million people that surrounds the capital city of Beijing, and the port of Tianjin. The first stage of upgrades to the network, which currently consists of an analog microwave transmission system, was completed with the installation of 1,380 km of fibre-optic cable. The next and final stage involves the installation of the transmission equipment.

The new network will soon be providing a variety of data transmission services, such as leased line services, ATM data transmission, telephony, video conferencing, fax services, and high-speed Internet access.

Draft Thai Internet law revised but concerns remain

The controversial Thai draft law to promote the Internet has been revised significantly.

It included several new provisions, which others had been changed.

However, the revised draft still advocates passing a law with sweeping powers, regulating Internet service providers (ISPs) and content providers to be licensed by a government committee. It also makes criticism of a foreign level of state or the Internet a criminal offense punishable by a possible prison term.

The Internet Promote Act was to be submitted to the minister of communications for his consideration on Jan. 30.

The draft law was initiated by the Post and Telegraph Department, while the Thai Chapter of the Internet Society undertook the task of drawing up the wording.

However, lawyers and academics spoke out against provisions in the draft three weeks ago, after the first public hearing. While the latest version includes several additional clauses that address Internet promotion, the fundamental threats to freedom of expression remain, according to those who have studied the wording.

The Internet Society Thailand has a Web site at <http://www.isoc-th.org>.

Motorola expands Taiwan chip plant

Motorola Inc. plans to invest some US\$13 million in its semiconductor and telecommunications chip manufacturing facility in Taiwan.

The company also awarded a US\$4.3 million contract to Engard International Inc. to supply satellite control software for the Indian telecommunications satellite consortium Motorola Satellite Communications. "Taiwan has recently weathered the financial turmoil remarkably well," Motorola executive vice-president Richard Young said. "During 1997, there were several rumors that Motorola would stop its investment in Taiwan and potentially withdraw it. I am here today to put the rumors to rest." □

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Computing-on-the-go
is essential to
many businesses.
You need to help
your customers
optimize the technology
for business advantage.

by Paul Lema

"Keep close to the customer" may be today's business mantra.

But to do that, companies rely on sales representatives, service technicians or even managers to spend time in the field. Mobile staff require that portable computer technology bridge the gap between customers and head offices. Information must flow just-in-time: production, inventory and distribution systems required to keep customers satisfied.

When Polaroid Canada wanted sales representatives to be able to demonstrate Polaroid digital cameras and editing software in the field, they purchased 40 Toshiba Satellite Pro 400C1DT notebooks from Data Integrity, a Toronto-based VAR. While the enterprise notebook's display, durability and extended battery life were key to enhancing Polaroid's digital imaging sales, the company also uses Toshiba enhanced port replicators and Desk Station V Plus docking stations so sales representatives can use the notebooks as desktop replacement units.

"The growing array of mobile users is demanding remote access to data and networks, the ability to send and receive files and electronic mail, and even run advanced multimedia presentations in the field," says Robert Grossman, vice-president and general manager of Toshiba of Canada, Information Systems Group. "These demands are driving rapid advancement in mobile computing offerings. Users are no longer willing to accept that technologies such as faster processors, larger storage

up to 16GB
flash RAM

PORTABLE COMPUTING

capacity or DVD are implemented first on desktop computers, with long delays before a version is available for their portable counterparts."

While portable computing opportunities for resellers abound in corporate and vertical markets, resellers should not overlook smaller businesses.

Allan Knight, president of Knight Industries, a Web site design and hosting company in Pickering, Ont., is on the road a great deal. He uses his laptop/modem-equipped IBM notebook computer to send faxes and check E-mail. And when he is pitching a client on-site, he also uses his IBM ThinkPad to display Web pages he has designed.

As more corporate computer users work at home and on the road, mobile computing has truly taken off. International Data Corp. (IDC) predicts the PC portable computing market will grow by 15.4 per cent compounded annually through year 2004 while the PC market is expected to grow 8.5 per cent each year.



"The work environment in North America is changing, becoming more flexible and mobile," says Eileen Nachshon, marketing manager, mobile brand, IBM Canada Ltd. "Portable computing is a great area with much potential for growth. They should look for value-added opportunities by marrying complementary products."

Qualify The Portable Computing Customer

So what are end-users looking for when buying a portable computer? It is up to the reseller to understand the customer and customize a portable solution to meet identified needs. For example, in the IBM family, corporations may look at notebooks like the IBM ThinkPad 360 as desktop replacements for executives who work at home, or as presentation tools for sales representatives who pitch corporate clients. However, there is also demand for lightweight notebooks like the ThinkPad 360 and handheld computers like the IBM WorkPad from managers, sales representatives, field technicians and entrepreneurs.

Whatever the need, there are some generic qualities end-users desire of which resellers should be aware. When asked to identify the single most important feature in a notebook, respondents to a PC Magazine online survey voted for

performance, followed by screen size and screen quality. If a reseller sells based on bells and whistles or price alone, the end-user may end up with insufficient hard disk space or processor speed, a lack of PC Card slots, or battery life that is unacceptably short.

Looking to the not so distant future, Nachshon predicts lighter, faster, more powerful, more feature-rich multimedia portable computers with DVD technology and IDC predicts that by 2000 DVD equipment will be standard on both home and office computers.

"With this technology, resellers will be able to tap into both the corporate and consumer markets. The same technology that brings consumers feature film-quality sound and video will offer corporate users unprecedented quality in their multimedia applications," says



Toshiba Satellite Pro 4000 notebook

Glossman.

More Power, Less Weight

Portable computers are already packing more power into smaller packages. Toshiba's Libretto 50CT, for example, is a mini-notebook that weighs under two pounds but includes a 75MHz Intel Pentium processor, 16MB EDO RAM, a 72MB hard drive, a 6.1-inch active matrix color display and a Type II PC Card slot.

However, if an end-user wants to pay less for a smaller computing device with longer battery life, introduce them to personal digital assistants (PDAs), personal information managers (PIMs), or Handheld PCs (HPCs).

HPCs usually



IBM WorkPad



The PalmPC Copypilot is portable and easy to use.

Hot Tools For Cool Sites

by Sean Carruthers

Believe it or not, it doesn't take a lot of high technology and expensive software to get started designing an attractive Web site. In fact, with the firing up of a Web browser, a good number of handy graphics tools are just a few clicks away.

Here are three such tools that can be most helpful in creating graphics and undertaking photo manipulation.

Paint Shop Pro 4 (Mac, Inc.)
<http://www.jam.com/pspp4.html>



Paint Shop Pro was a great program even when it was still on Version 3. Version 4 of this program doesn't do anything to most with the reputation it is far more sophisticated than the average paint program, yet far less expensive than similar commercial programs with comparable features.

Paint Shop Pro's most useful features include image resizing and resampling, color adjustment and saving, filters, "buttonizing," text manipulation, and photo retouching tools and autohealing. Also, instead of the clumsy method of saving and pasting everything inside a selection box, Paint Shop Pro allows for tracing around the edges of an object to be copied, and pasting it into a new image.

For file saving, PSP supports almost all common formats, including GIF transparency. The use of compression in the JPG format allows for some good disk-space savings, with minimal loss in picture quality.

The program is free for download, but has a suggested trial period to allow you to judge whether or not you find the program useful. After that point, purchase of the pro-

gram is US\$34 (including shipping of a CD-ROM copy and the support benefits that go along with owning a licensed version).

GIF Construction Set 32 (Aldusoft Mindworks)
<http://www.mindworkshop.com/efrimage/>

Essentially what its name says, GIF Construction Set is a useful tool for putting together or defining GIFs. One is forced with some information for animation and transparency. Using a "block" system to create the GIFs, the GIFCon32 allows the user to define transparent colors, and to create a single animated looping GIF from picture files of any of the common types. Control blocks separating the image blocks define which color is the background color and how long each image block will appear before flipping to the next.

The biggest downside of the program is its unforgiving nature: if you put "dirty" images into GIFCon32 (for example, with speckles on the background color of a slightly different shade), dithering and transparency can create wild and ugly variations from frame to frame in the final animated GIF. If care is taken to ensure that the incoming images are clean, and adjustments are made with regard to the palette, this can be overcome easily enough, however.

GIF Construction Set is also free for download. Users who find the program helpful are encouraged to send US\$20 plus \$3 shipping, and will receive the latest copy of the program, plus other assorted goodies for evaluation.

Microsoft Image Composer
<http://www.microsoft.com/imagecomposer/default.htm>

A more recent entry into graphics manipulation programs, Image Composer is a powerful little guy. Not to suggest it's too useful, but chances are you'll be tempted to spend a good

deal of time with the program simply playing with it to see what it (try (and) works) things can be created.

Image Composer is sort of a cross between a paint program and an object-based construction kit, allowing the user to manipulate and stretch individual graphic and photo objects in a composite, and flip them, rotate them, and add a shadow here or an air effect there. Layers can be sent to the background or brought back to the foreground. Groups of objects can be flattened into one new item, and images can be copied and reworked, flattened, spun, mirrored, or washed out, for example.

Although the program is a very versatile tool overall, it is most useful for graphic items that need slight alterations from time to time. The program will export to all of the common graphic file formats but it also has a proprietary file format (.img) which saves all property information data on objects and their



placement. This means the composite can be entered later with one item adjusted, rather than having to start from scratch or awkwardly recreate parts out of a "flat" picture file.

The beta software for Image Composer is free for download. It ships with the retail version of Microsoft's FrontPage 98 Web site development product. ☐

Sean Carruthers does Web consulting for Amtech/Artisan Computer Services (<http://www.amtechinc.ca>) in Brampton, Ont. He can be reached at sean@amtechinc.com.

Don't Fail To Plan

by Douglas Gray



There's an old saying: *Entrepreneurs don't plan to fail, they fail to plan.* You want to make sure that you don't make the same mistake.

Many people live and work without a clear sense of direction, and realistic and attainable goals or benchmarks to monitor and track their progress. Researchers have determined that people who set personal goals — in writing — are more successful, suffer less stress, and tend to work smarter rather than harder.

Put It In Writing

In running your smaller business, a written business plan is an essential part of good management. Most small business owners don't complete a written business plan. It is not too surprising then, that historically, most small businesses have problems and cease to operate within five years.

And it's not surprising that many business owners go through successful periods where they are overworked and over-stretched. In that scenario, the pay, challenge and fun of the venture can quickly evaporate.

There are many reasons why few small business owners put the plan in writing and monitor it. Many don't know how to do it, others don't know to prioritize their time effectively or feel they don't need a plan because they are not borrowing much money.

All these assumptions ignore the key compelling benefits of a properly written and monitored plan. It is a pragmatic and powerful instrument, a catalyst to action. It allows you to visualize your dream, to feel it and taste it. By predicting and then evaluating your performance and progress against these projections, you build awareness, self-confidence and pride. It is the single most potent predictor of success, and get ridder of problems, in small business.

The format and structure of each business plan varies. To be effective, however, your plan should answer the following questions, in a minimum:

- Where am I now?
- What are my personal and business goals and objectives?
- Is this business concept a good personal fit?
- Is this a viable business measure?
- Where am I going?
- How am I going to get there?
- Who will I use to help me get there?
- Who is my target market?
- How am I going to hit my target?
- Who is my competition?
- Where am I going to get the money for my ongoing needs?
- What costing prices should I plan for?
- What are the downside risks and upside potentials?
- Should I have active or passive partners, or go it alone?
- If having partners, do I have a partnership agreement to pre-empt and deal with future problems?
- How often should I monitor and revise my plan?
- What is my action, implementation and time schedule?

There are many business plan reference books available in the bookstores or library. There are also some excellent business plan software programs available for under \$100. Have your plan constructively critiqued by relatives, friends and colleagues who will be candid in their feedback.

Don't get overly emotionally connected to your plan.

How Not To Do It

To illustrate the perils of poor business planning, let me tell a sorry tale of how an intrepid Canadian, otherwise savvy and successful business owner, formed a company, each

put in \$30,000 seed capital, and then proceeded to blow the whole thing in six months. Two of them were business lawyers, two were chartered accountants and two were experienced business people.

The story goes back to 1980, when gasoline prices in the U.S. were at a premium. This motley crew of entrepreneurs saw an opportunity to import a gas-saving device from Italy to California to fill the needs and tanks of gas-hungry Americans. Although a financial plan was prepared, no other detailed plan was written. And the financial assumptions were flawed. Rather than calculating three scenarios — liberal, realistic and conservative — the income projections were optimistically overestimated and the expenses underestimated.

The other pitfall was not prudently planning for contingencies such as supplier and regulatory delays, the nature and extent of competition, and public cynicism about the product's quality.

You will be spared the sordid details, but the outcome was a disaster from concept to strategy to implementation. All that could have been anticipated and avoided with a detailed and realistic business plan. With such a plan in hand, a rational decision would have been made not to proceed.

Should these supposedly enlightened individuals have known better?

You bet. Which proves that to one is arrogant from the triple risks of greed, haste and over-confidence, coupled with untested entrepreneurial zeal! All six partners were affected by the same epidemic. I should know. I was one of them. ☐

Douglas Gray LL.B., formerly a practicing lawyer, is a Vancouver-based speaker, consultant, columnist and author of 15 best-selling business books, including The Complete Canadian Small Business Guide published by Mc Graw-Hill Ryerson.

Smart Newsletters

For Smart Companies

by Cathy Cowan



Newsletters are a great tool for increasing your visibility among your current and prospective customer base.

They're also a great way to build and enhance customer loyalty since they put you in direct contact

with your targeted market, enabling you to say anything and everything about your company.

This "freedom of expression" can prove a powerful asset. But if not properly planned, it can be a waste of your time and money and your customer's attention. Before you begin writing, there are several key decisions to be considered to ensure your newsletter goes right.

Who Do I Send It To?

If you have a corporate database of your existing and prospective customers, the database is an excellent place to start. If not, you might want to gather your name and collect business cards of people who you think will be interested in the newsletter. Include a small section in your newsletter that provides details on how to subscribe, or unsubscribe, so that everyone who is interested can apply to receive a copy. It's important to offer subscriptions only to "qualified" applicants to avoid the unnecessary expense of printing and distributing copies to people who will never be customers.

You can make the "qualification" process as easy or as difficult as you see fit — whether it's a matter of providing an acceptable company name or title or answering a series of questions.

Ask your partners and customers if you can leave your newsletter at their homes or business centers for their partners to read and enjoy as well. And don't forget to pass the newsletter to your Web site and encourage visitors to subscribe.

Make It FUN!

People are naturally attracted to a sense of fun. Obviously you need to remain professional but try to add in some humor where you can. For example, feature a business-related cartoon in each edition or offer a contest with donated prizes. Newsletter writing should have a fun tone — use amusing and attention grabbing headlines, play-on-words, revamped song lyrics, or any techniques you can think of to encourage your customers to read and enjoy the newsletter from cover-to-cover, and look forward to the next edition.

Content, Content, Content

The most important rule of newsletters is content, content, content. No matter how beautiful and fancy your newsletter is, if it doesn't offer useful information to your audience they're not going to read it. Always ask yourself, "What type of information do my customers want to know?" and make sure your newsletter provides it. A checklist for some good content ideas includes:

- company news,
- technical tips,
- how-to information and advice,
- industry updates,
- employee news and profiles,
- partner news,
- announcements and write-ups of seminars, meetings, conferences and trade shows

Get Everyone Involved!

A newsletter can be a very time-consuming project. If possible, try to simplify the process by setting regular deadlines — for example, the 15th of each month — and really write or assign articles as early as possible.

Give writers established and realistic deadlines and appoint one or two people responsible for coordinating and editing the materials. Offer your partners a regular column to talk about their new products or tips. Providing partners with free publicity might earn you brownie points as well!

How Often?

Before planning and offering a newsletter for customers, realistically determine with your staff, appointed "editor" and contributing partners how frequently you'll be able to pull one together. You won't establish a very positive image for your company if you promise a monthly newsletter and only produce two editions in the next year.

Remember that no one is expecting magazine quality or length from your newsletter. Keep it simple, short, sweet and to the point and regular production will be a much easier and happier process for all! Regular distribution is critical to establishing top-of-mind awareness with your customers — once a month or quarter is ideal.

On-Line Or Not?

E-mail is an easy and cost-efficient alternative to the traditional four-page paper newsletter. However, before planning your on-line newsletter make sure that the people on your distribution list want to receive another document in their E-mail and always provide an easy way for people to cancel their on-line subscriptions. Before deciding on the medium, think about your target audience: are they going to be more likely to read an electronic or paper version?

At the end of the day, if your newsletter doesn't go to the right people, isn't read and doesn't provide a positive impression of your company, your time would have been better spent playing PacMan.

It's definitely worth the extra time in the beginning to spend a few hours planning your newsletter rather than writing one you had in the end — and remember there's always the next edition to make improvements to! ☺

Cathy Cowan is a writer/consultant with the advanced technology division of Shandor & Canada, a full service public relations firm with offices across Canada. She can be contacted at ccowan@shandorcan.ca.

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E-Commerce Is Key To Lower Business Costs

by Klaus Eitel



Industry analysts are optimistic about electronic commerce because it is delivering on its promise to lower costs, reduce order processing time and improve information flow. Business can be conducted around the globe, anytime, for a fraction of the cost of conventional methods—and in a fraction of the time. And the tremendous growth in Internet

looking to Internet EDI to expand their reach. EDI solutions for the Internet use Web browser interfaces for input and display, and then convert the hypertext machine language (HTML) code to the EDI format for transport. As a result, smaller firms and temporary partners that need to participate in the larger organization's EDI network don't need to invest in expensive VAN systems, only a modest PC and browser.

The benefits Internet EDI provides make it easy to justify: the ability to exchange documents during business and non-business hours, reduced business transaction costs, reduced information float, enhanced customer service, faster inventory replenishment, advanced notification of shortages, cuts and substitutions, and more reliable forecasting by supplier and vendor, improved shipping, receiving and product tracking, and efficient data flow at both the inter- and intra-company levels.

In addition, implementing EDI over the Internet allows organizations to use other electronic commerce tools like "smart" forms, multimedia capabilities through the Web, and real-time interaction.

EDI Conversion Challenge

While software is an important part of any E-commerce solution, the key to a successful EDI implementation is mapping—a process involving the conversion of EDI data into a form that can be used by a particular application (such as an electronic purchase order to automatically update an order-processing application). Rather than attempting to

execute this activity internally, most organizations develop a long-term relationship with their VAMs for assistance in moving to full-blown E-commerce programs. Developing a plan and implementing the various electronic commerce applications in

According to market research firm Forrester Research Inc., of Cambridge, Mass., the value of goods and services traded electronically between companies will grow to US\$8 billion this year, up 1,000 per cent from 1996. By 2002, the firm predicts an increase to US\$327 billion.

trading alone just last year reflects an increased confidence in the security and reliability that can now be built into Internet access.

Electronic commerce is the umbrella term for an entire spectrum of activities such as electronic data interchange (EDI), electronic payment systems and order management. It also includes business applications linking solutions in both business-to-business and business-to-consumer applications, as well as information delivery and product support services.

Automated Business Transactions

EDI provides a set of computerized forms that automate common business transactions such as purchase orders, invoices, shipping notices and requests for proposals. Traditional EDI, which is based on private value-added networks (VANs), never really gained much popularity because it is cumbersome, expensive and restricting. Internet EDI offers a cost-effective alternative to traditional EDI without the need for private networks.

Even businesses that have invested in EDI infrastructure are



pages gives users the opportunity to raise their own capability before another is added.

SET To Go

As businesses move from simple applications, (such as posting product information on their Web site) to transaction-intensive E-commerce programs, they become more aware of the need for increased security. Others argue that sending business-to-business documents over the Internet is as safe, if not safer, than sending them through the postal service. Many even feel that purchasing over the Internet is safer than sending money through the mail or giving out credit card information to consulting phone services.

Nevertheless, the National Computer Security Association (NCSA) has listed five key constraints for secure electronic commerce: privacy, integrity, authenticity, non-repudiation and non-exposition. First, transactions must be private between sender and receiver, and they must have integrity to ensure that the message hasn't been distorted along the way. Authentication and non-fabrication ensure both parties of each other's identity. Finally, non-repudiation ensures that the sender cannot deny that he or she actually sent the transaction.

Transport-layer protocols, which operate between the browser and transport layer, is considered vital to establishing secure communications channels between parties on the Internet. To solve the problem Netscape initially developed SSL, and subsequently, Microsoft developed its own version Private Communications Technology (PCT). To solve compatibility issues, the two firms are jointly developing a consensus protocol, Transport Layer Security (TLS), which has been submitted to the Internet Engineering Steering Group (IETF) for review.

Visa, MasterCard, and American Express have endorsed both TLS and Secure Electronic Transaction (SET) as Internet standards. The SET standard is a method to secure banked transactions on the Internet. Other cross-industry standards groups are also developing guidelines for the many inter-operability issues associated with Internet document transport.

Digital Signatures, Certificates

User registration requirements can be established and monitored using the Secure Sockets Layer (SSL) protocol for encrypting password protocols and bidirectional communications between organizations. A new standard, IEEE X.509 certification, will not only support EDI, Email and remote authentication, but other applications such as public keys on smart cards and encryption as well. In theory, certificates that are based on the X.509 standard cannot be fabricated or repudiated.

RSA Data Security Inc. has introduced a new form of public-key security algorithm called Elliptic Curve Cryptography (ECC). RSA's 1,024-bit domestic key cryptography and ECC are being widely used in signature and secure transaction products. A number of other equally sound cryptography products are also being incorporated in EDI and E-commerce transaction products.

Consistent, Reliable Delivery

The best way to ensure that mission-critical corporate data won't be jeopardized is to move the Web site outside the company's own net-



work to a highly-reliable Web hosting facility. The secure commerce servers that these facilities use encrypt and authenticate transactions and messages sent over the Internet. With this approach, the company doesn't have to invest in expensive hardware, software and maintenance, and visitors will have consistent reliable access to the Web site. Most business customers will be accessing the site at precisely the same time that employees are using the Internet to perform their jobs. If there is only a single path to the Internet from the corporation's premises, the traffic in both directions can experience significant slow-downs.

The Reseller Role

But with reduced staffs, most managers cannot afford to allocate key people to tackle the development and deployment of Web-based business sites. These businesses represent a ready market for knowledgeable resellers who can help them make the transition to open, standard-based Internet commerce solutions that are secure, reliable and easy to use. ☐

Blair Ebel is director of market development for San Diego-based TCG CRAFT Inc. (<http://www.tcgcraft.net>) — the Internet Service business unit of Teleport Communications Group Inc. He can be reached at ebel@tcgcraft.net

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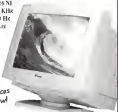
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Cheap PCs

Take Market By Surprise

by Alan Zisman



With more or less half of all North American households owning a home computer, it had seemed for awhile that the market was flooded with saturation. The half of the population with the income and desire to own a computer already had one, while the rest of the population wasn't particularly interested.

While computers were still being sold to home users, they tended to be purchased by people who already owned a computer, rather than to first-time buyers. The market simply wasn't expanding significantly.

But this past fall, something changed.

Suddenly, as much as 40 per cent of sales were in a new category: computers that were selling for less than US\$1,000 — about \$1,400 in this country.

This wasn't the first time that businesses had tried to market to that price point. But in the past, consumers had tended to avoid bargain-priced PCs, looking at them (with reason), as sub-standard low-leads and units featuring outdated technology. And with the profitable fear that any computer purchase is obsolete as soon as it's out of the box, there's not much more to last-year's technology.

This time around, though, buyers seem to be flocking for the low-priced units. Some of the sales are going to families buying a second PC. As well, the breakthrough on price may also mean a breakthrough to many of those families that had been resisting buying a computer at all.

A couple of technology reasons have helped make the cheap PCs harder to resist this time around, low prices for RAM, hard drives, and CD-ROMs have removed some of the barriers that used to stand in the way of making affordable PCs that were actually useful. As well, Pentium and compatible CPUs are a mature technology — manufacturers can purchase reasonably high performance Pentium 166 and 200 CPUs (or clones from AMD and Cyrix) cheaply and in quantity. And while previous attempts at low-priced

models offered consumers 486s when it was clear that the future belonged to the Pentium line, Intel has not yet successfully drawn a line between its Pentium and Pentium II lines — and consumers are still willing to invest in Pentium-powered computers.

The current crop of low-end machines are, in fact, powerful enough to run the generation of software — productivity applications like Office 95, as well as multimedia and games — at least the software that's being released today. In a pre-Christmas daily newspaper, a local store offered a Pentium 166 MMX (for \$899) — with 16MB of RAM, a 1.3GB hard drive, a JAZZ CD-ROM, a sound card, and a 33.6 Kbps modem, complete with a 14-inch monitor. Not a top-of-the-line system, but powerful enough at a very attractive price.

Expect this trend to continue, with lead announcing that it will be offering CPUs aimed at this price point — including dumbbed-down versions of the Pentium II. As well, expect to see other processors following in the direction of Cyrix's recent efforts, combining video, sound, and some other functions with the core CPU; lower chips needed means lower prices. And the resulting machines, with less need for expansion, will potentially be easier to maintain, with no need to crack open the case to add components when everything's already built-in.

That creates the possibility of moving the low-end PC explosion from the home market into the business market. Instead of the promised US\$350 Network Computer with no hard drive, limited RAM, running Java applications across a network, a low-end but powerful PC holds a lot of promise. Replace the modem, CD-ROM, and sound card of the machine advertised above with 32MB of RAM, a 2GB drive, and an Ethernet card, and you've got a lot of business machines. And when business desktop computers cost \$900 instead of \$2,500, expect to find them as a lot more desktops.

Add in less need to open the case to fiddle with the hardware, and you've threatened many of the Total Cost of Ownership angles that have led to business complaints about

operating large numbers of PCs.

But selling machines at new, lower-than-ever price points will cut into the already slim margins for manufacturers, distributors and retailers. And with the low-end units appealing enough to attract buyers, at least some of the sales are being made to customers who would have otherwise happily purchased a high price, higher profit machine.

As a result, some companies may actually find themselves losing money by increasing sales — a situation which, for example, caused problems at Apple in the early 1990s when the company released the Mac Classic model for US\$1,699. A dramatic explosion in sales meant an equally dramatic drop in profitability.

At his keynote address at this past Fall's Comdex, Compaq CEO Eckhart Pfeiffer predicted that we'd be seeing a dramatic change in the computer market — that the top four vendors (of course, including his company) would dominate sales, to the detriment of mid-tier companies. According to published studies, in the third-quarter of 1997, the top US sales accounted for fully 60 per cent of sales, compared to 52.3 per cent in the previous year. Third-quarter sales of the top four companies (Compaq, Dell, IBM, and Hewlett-Packard) grew by 50 to 60 per cent, while the companies ranked six through 10 averaged a horrible 1.5 per cent growth. As a result, companies including AST, Toshiba, Acer America, and Packard Bell-NBC have been forced to stretch.

The surprisingly strong emergence of the low-priced PC offers opportunities and dangers for companies at all levels of the sales channel. You can't afford to ignore this trend, as affordable yet powerful PCs become increasingly common at work, in the home, in classrooms, and with multitalented families owning multiple machines. But be aware that, in the words of Intel's Andy Grove, "Only the persistent survive." ■

Alan Zisman is a computer journalist and teacher living in Vancouver. He can be reached at alan@compuserve.com.





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Redefining Roles

The Web, and business realities, are reshaping the channel.

by Graeme Bennett



Have you seen the Web-based ordering and tracking system called Inroads yet?

The Inroads site at <http://www.inroads.com> has detailed information on the capabilities of the system, so I won't repeat it here, except to summarize it as follows: If you are a retailer and you want to order a product, you want to know where it is and how long it is going to take to get it. Inroads is a very good example of a database-driven system that does this.

Because Inroads owns a majority stake in Inroads, it should come as no surprise that the system is used for ordering and tracking Inroads products. But, clearly, similar technology is bound to become ubiquitous at the retail level. For virtually all manufacturers and distributors, Inroads is merely a harbinger of things to come.

For a Web-based system written primarily in Java, Inroads performs well. Response times are usually less than a second. And retailers can view color photos and video clips of most of the 6,500 products the distributor stocks.

Real-time access to inventory data means that you can see what a supplier's own current promotional offers, browse pages describing manufacturers' latest products, and place an order and receive immediate confirmation. As of the last fall, retailers can track their shipments, too, thanks to a live data feed from United Parcel Service Inc.

Inroads has not yet delved into electronic payments, but the system holds financial data on its customers and tracks outstanding invoices and credit status. Money is given when credit limits are exceeded. If all's okay, the system accepts the order and sends out an invoice via postal service or fax.

Developing sophisticated systems like this takes more money by a factor, of course. An article on the Inroads Web site says the system cost about \$250,000 to build, in addition to Inroads's 34 million investment in Inroads. But such Web-based investments are an important step along the road to E-commerce.

I first heard about Inroads during a con-

versation with a manufacturer's rep sitting next to me on the return trip from Caesars/Fall in Las Vegas. We were discussing the relative merits and drawbacks of dealing direct versus working with distributors. Considering how the coming wave of E-commerce might affect existing manufacturer/distributor relationships, I offered the

opinion that when the volume or dollar value justifies it, dealing direct makes sense. However, in lower volumes, he reminded me, the distributor's value is clear. But, I wondered, couldn't (and wouldn't?) manufacturers start to force distributors away from the big money by setting up virtual distribution networks? If the wholesaler is

becoming the New Streetfront in the Web economy, as the retailer expected to become the value-added, and as the manufacturer determined to encroach upon the distributor's traditional turf?

Walter Forbes, the CEO of Circuit City, apparently thinks so. Forbes is quoted in *Wired* magazine as saying he has learned that "the Internet is not a haven for today's retail economy — The last thing retailers want is perfect information."

Forbes says so, as materialized by price, is going to be increasingly important. Thus, it makes sense to develop strategic relationships, much as people did over the last

few decades to compete more effectively with supermarkets. Similarly, Forbes believes that a well-timed wholesale-level pricing that will eventually prove to be the model that dominates the on-line shopping world, not a retail model that works on the Web.

The article was when customers called a Ramsdale Inn to make travel reservations, a clerk would ask if they would be interested in joining a discount club, offering \$20 on three gas coupons as an incentive. This idea of postponing the exact times when consumers are most receptive to a certain pitch is one that

anyone selling a product can leverage to improve sales opportunities.

Whether you are building E-commerce systems or reinforcing shopper loyalty using the equivalent of frequent flyer points, such questions are worth asking, as on-line databases spring up like spring daffodils and E-commerce opportunities emerge through the crawling, flailing of the Web as a ubiquitous business information access tool. ■

Graeme Bennett is the Senior Editor of The Computer Paper and a former computer writer. He can be reached at grbennet@comp.ca.



An Inroads demo is on the Web.

OS Update

With Microsoft's announcement that it will begin selling the beta copy of Windows 95 to the general public in Canada and the U.S. starting in February for about \$1000, the focus shifts bright for many of the technologies that Windows promises to enable. CD-R, FireWire, DVD (which was the RedBox DVD drive as a "reference" standard), Hewlett-Packard scanners, TV-enabled graphics cards like the ATI All-in-Wonder and ATI motherboards will all be beneficiaries.

Statistics like the January 1995 International Data Corp. report that now Windows 95 account for 40.4 per cent of the PC software OS units shipped in 1995, suggest that there is still plenty of other operating system action, too — especially when one hears that IBM says OS/2 Warp 4.0 will outpace Windows 95 by shipping 200.5 per cent, bringing its market share from 3.6 to 6.2 per cent.

Apple, meanwhile, is getting the first touches at its Mac OS 8.0 and QuickTime 3.0 technologies. Probably even more than the new OS, I expect the cross-platform QuickTime 3.0 will produce a significant impact. QuickTime 3.0, you see, directly supports the digital video format used in the so-called new DV digital cameras. QuickTime 3.0 — on both Macs and Windows — directly reads and writes the same data format that is used through a FireWire connection. That, combined with Windows' support for FireWire hardware and the big graphics push currently underway in the Windows market, sounds like a market builder.

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LDAP's Authors Write Definitive Book On The Protocol

by Stephen Barab

Essentially a Directory Service provides a means to store, manage, organize, secure and access attribute pairs describing network resources such as volumes, servers, printers and users.

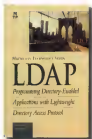
The LightWeight Directory Access Protocol (LDAP) allows network addressable resources to exist in a single logical place, which is accessible from a multitude of applications. In an E-mail application, you could as easily look up someone's address on any computer as you could obtain an address from

your local address book.

Dirty data and data cleansing is reduced. Data repositories can contain duplicated and outdated information when the data is located in several places.

Updating a name stored in 30 different locations can be a problem. A global directory and the associated services, which allow access and management, provide a single point of reference for you and your applications.

Now we come to an important question.



Why would you or your customers want to read this book?

LDAP has emerged as "the" Internet standard directory service protocol. Knowledge of LDAP can be the key to the successful implementation of Internet-oriented systems and network applications.

The authors, Hines and Brink,

Talking To The Author!

Tim Hines is currently directing senior architect for Netscape Communications Corp., where he leads the company's directory implementation. He holds Ph.D. and M.S.E. degrees in computer science and engineering, and a B.S.E. in aerospace engineering. He co-authored the LDAP specification, LDAP API specifications, and numerous other Internet RFCs and papers. He remains an active member of the IETF, chairing the ASIS working group, continuing the evolution of the LDAP protocol.

CCW: What personally prompted you to enter the computing field, to work in Directory Protocols, and finally to write this book?

I entered computing through aerospace engineering, an undergraduate major. Deeply interested in computing as a tool for modeling and designing aerospace-related things, I grew to realize that computing was more interesting for its own sake, so I decided to switch programs for my masters and doctoral graduate studies.

I first got interested in directory protocols while working at the University of Michigan. I was part of a group responsible for running some of the campus mail servers. At a time when Internet mail was just starting to be used so the

future Directory was a logical reaction in support of the email infrastructure. At first, I became interested in X.500 and then got involved in creating LDAP when I realized the problems X.500 had. Directory service is one of the most important, interesting, and challenging fields in computing today, and yet there is a definite lack of good books on the subject. So, Mark and I talked about it and decided that we'd be really sorry if we didn't take the opportunity.

CCW: What comments would you like to make about your book and your LDAP work?

Since LDAP is mostly an infrastructure, "behind the scenes" kind of technology, many people don't see its importance and relevance to their everyday computing lives. Directory services, driven by LDAP, is going to be the way the Internet platform itself becomes a true providing services historically provided by an OS or DBS. People need to start thinking out of the box with directories.

CCW: Who are the critical forces endorsing LDAP and promoting its wider use?

Well, being an Internet protocol, developed by the same group of people that brought the world TCP/IP, DNS, SMTP, and HTTP, LDAP seems with a lot of momentum. Over the past year-and-a-half, we've seen LDAP adopted in a big way by virtually every major player in the industry including Netscape, Microsoft, IBM/Lotus, Oracle, Sun and HP. And these vendors are actually developing and shipping products, not just endorsing some abstract principle.

CCW: What are "the" major weaknesses in LDAPv2 and the major enhancement needs of LDAPv3 over v2? Are there the individual needs for a v3?

The biggest problems with LDAPv2 were its weak security, lack of inter-implementation capabilities, lack of referrals, and lack of extensibility. Realities to say, there were strong shortcomings.

LDAPv3 has solved these problems by providing better security, in the form of SASL authentication and SSL transport, using the UTF-8 encoding of strings to hold character data, and the use of language tags on

co-authored the LDAP specification and are acknowledged worldwide as experts in directory protocol design and implementation. With Howes as the lead and Smith as a key member, the development team produced the most widely used implementation of LDAP from the University of Michigan. There is no greater authoritative source on LDAP as if you or your customers need a solid foundation, this is "the" book.

This book is very well written and easy to read. There's plenty of sample code segments, tips, and explanations. Whatever your computer's level, there is something of value. The first three chapters are a great introduction to LDAP and its application. Chapter 3 in particular provides an excellent overview of LDAP models.

Advanced professionals will be able to skip around quite easily and will find the reference sections very useful.

a) LDAP Resources,

introduce the addition of a referral mechanism allowing disparate resources to be tied together, and finally by adding lots of support for extensibility.

This last feature gives us real hope that an LDAPv4 will not be needed any time soon.

The protocol can now be extended incrementally, so new needs come up, without changing the version number.

In five years we will certainly see LDAP as widespread and as ubiquitous as TCP/IP and the DNS. It will be another service that people come to depend on living there, kind of like an LDAP shell now.

And, with that infrastructure in place, we'll see lots of interesting development on top of it.

CCW: Can you make some general or specific comments about the direction that your work is taking at Netscape Communications?

Howes: I continue to work on directory things, and to expand the role of directories in the Internet.

And I'm also starting to take on with total responsibility in the security and management areas as well. Both

Title	LDAP — Programming Directory-Enabled Applications With Lightweight Directory Access Protocol
Authors	Tim Howes and Mark Smith
Publisher	MacMillan Technical Publishing
ISBN	1-57003-009-0
Cost	\$39.95
Description	The book provides the skills to write directory-enabled applications with the Lightweight Directory Access Protocol (LDAP). C/C++ is the featured language and the focus is on LDAP v2 with some information on LDAP v3.
Rating	Recommended for programmers and network consultants who have the time to spend and want a thorough treatment of LDAP from the authors of the protocol.

"Directory service, driven by LDAP, is going to be the way the Internet platform itself becomes real, providing services historically provided by an OS or NOS. People need to start thinking out of the box with directories."

— Tim Howes

of which benefit greatly from directory technology.

CCW: Do you have any opinions about competition at the marketplace?

Howes: Of course! There's lots of great competition out there, which is one of the things that makes life here at Netscape so exciting. Without competition like we have, we would not be able to keep driving forward, maintaining the de facto leadership that we've established.

CCW: What do you consider to be the most probable solution for resolving congestion issues in communications, and in the Internet?

Howes: I don't think there is one solution. I think it's a combination of things, from better tools to organize and filter out information as it arrives (so bandwidth is not wasted in the first place), to better network-level algorithms for avoiding and responding to congestion, to the level spent always to guarantee bandwidth in return for some premium. All these things and more need to happen to really solve the problem, which are the same perceptions that "the Net is slow today" or that there is "information overload."

- b) LDAP API Reference,
- c) A String Representation of Distinguished Names, Search Filters, Standard Attribute Syntax,
- d) LDAP History, Model, Mapping, Elements, and
- e) LDAP URI Format

System administrators will enjoy Chapters 17 and 18 describing command-line tools (programs) for accessing and modifying LDAP directories. Shell and Perl script programmers will find several completely annotated sample applications.

Educators may wish to include the book into their lab curriculum. The numerous coding examples illustrate every point. ☐

Stephen Barad's ASP is a former senior advisor and co-convenor for the RADM Computing Program at Capleton College, which has won a number of international national and provincial awards. He is now NEAP and Microsoft ADP certified and can be reached at sbarad@capletoncollege.bc.ca

What do you see as the most critical technology currently or to come about shortly?

Howes: I will say that three of the most critical areas for future work are security (as more "real" stuff gets done at the Net), the mobile segment, the Internet, management (both of information itself, and the systems that provide it to us) — a huge state both for people surfing the Net and for companies trying to run their own net, and the continued abstraction of the computing platform.

In the last area, we've come a long way from arguing about Ethernet versus Token Ring, then TCP/IP versus DECnet, and now Windows versus Mac versus Unix. The abstraction keeps rising, and the next level is one where we stop arguing about the OS as it becomes the device driver of the Internet Platform.

CCW: Do you have any opinions or issues you would like to voice to an international audience?

Howes: Just an apology for the lack of international support in LDAPv2. A situation that we've worked hard to rectify in LDAPv3.



3Com has networking/modem PC cards

3Com Canada has announced two new combination Ethernet and Fast Ethernet LAN and 56Kbps modem PC Cards (PCMCIA) with X2 technology. Once installed, mobile computer users can connect to the LAN while in the office, and connect remotely to the Internet, corporate intranets and office networks.

The 10Mbps LAN + 56Kbps modem PC Card, model number 3CCFEM556, has a suggested list price of \$429 for the TP version and Celer529 for the EPC version model. The list price for 3Com's Megahertz 10/100 LAN + 56Kbps modem PC Card, model number 3CCFEM556, is \$579.

See <http://www.3com.com>.

TernaWeb rolls out communications products

TernaWeb, a division of Toronto's Group Multimedia Network Corp. (GMNC) is shipping two new products — Xpressnet and XpressAgency.

Xpressnet is designed as entry-level "intra-group" communications software aimed at corporate departments and small- to medium-sized businesses. (A demo version is available on the Web site.) The groupware product incorporates an SQL database, a data manager for organizing, accessing and archiving shared files, chat and audio/video phone capabilities, and an automatic audit trail of project communications. It has a suggested retail price of \$3,995 for a 10-user package, with a one-time fee of \$95 per additional user. Xpressnet Host provides partitioned database functionality for larger corporations and ISPs that want to provide a virtual Xpressnet hosting service, and is priced at \$4,995 plus \$15 per month per user.

XpressAgency is a cross-platform client/server package designed to provide



business management for marketing, advertising and design companies, as well as corporate marketing departments. The workflow product lets team members share information and collaborate using browsers. They can communicate with chat, audio and video.

The product also contains project management and organizational capabilities, and pricing starts at \$4,995.

See <http://www.ternaWeb.com>.

IBM Aptiva — big power, small price

IBM Canada Ltd. has introduced two high-powered but budget-priced consumer PC models — the Aptiva E46 and Aptiva E26.

The E26 is based on the K6 233MHz processor with a 24X CD-ROM drive, integral 56K Flex modem, and ATI Rage II+ 64-bit graphics, for a suggested retail price of \$1299. The higher end A46 includes a 15-inch monitor, a 266MHz K6 processor, a 4GB hard drive, and 32MB RAM for \$2,599.

See <http://ibm.ibm.com/pch/aptiva> or call 1-800-465-7999.

New ROM-based fingerprint-based system provides pre-boot security for PCs

(NB) — ID Software Inc., which develops innovative security software and hardware for PCs, has announced a fingerprint-based pre-boot security system that uses read-only memory (ROM)-based software to keep down the costs. It reads output from a Sony fingerprint scanner and keeps unauthorized persons from booting the computer or accessing data on a hard drive or floppy disk.

In practice, a pre-boot security system verifies a user's fingerprint before it will allow the computer to boot. This prevents unauthorized access even before the operating system is loaded, so tricks like using a floppy disk to boot the system fail to bypass the security system.

ID's all-in-one announcement was timed not to jump the gun on a previously announced Phoenix Technologies' Preboot System Security Technology (PSST) and Preboot CryptAPI (PCAPI) specification. The new security options for basic input/output system (BIOS) chips are not yet available in channels but may appear by mid-1998, an ID spokesperson said.

Meanwhile, the ID read-only-memory (ROM) firmware and Sony fingerprint ID combination will be available by mid-January for use with a special network card, the source said.

The Sony fingerprint identification unit, or FIU, used in the system is a small, self-contained fingerprint scanner that does not depend on the computer's processor to recognize authorized fingerprints.

Once the matching Phoenix BIOS is available, a user will plug the FIU into a serial port and then make the BIOS extensions. Access to data on the floppy drives and hard drives will then be blocked without the correct fingerprint.

ID Software is at <http://www.idsoftware.com/>.

Brights get brighter?

Polaroid Canada Inc. has introduced Polaroid InJet Photo Paper, which the company says "looks and feels like a real photograph." It is available in an 8 1/2 by 11-inch format, and works with all major printer brands, says Polaroid.

With 15 sheets per package, the suggested list price is \$15.99. See <http://www.polaroid.com>.



Epson announces 'lite' version of printer

Epson Canada Ltd. has announced a new, lower-priced "lite" version of the Epson Stylus Color 600 printer. The new version of the printer, the 600SE model, has a suggested list price of \$359, and is being sold exclusively through the Future Shop chain of stores in Canada. The essential difference in the 600SE, which accounts for its lower price, is that it lacks the bundled Perfect Picture Imaging Software Suite. According to Jim Mandala, director of sales and marketing for Epson Canada, "The Epson Stylus Color 600SE provides consumers who already own imaging software an opportunity to take advantage of the exceptional value and winning features of the original Stylus Color 600 at an excellent price. It also broadens and differentiates Epson's retail channel products."

See <http://ibm.ibm.com/pch/aptiva>.

Elsid Software announces E-mail security

As E-mail traffic on the Internet and other computer networks continues to expand exponentially, there is an increasing awareness of the ease with which unauthorized people can view other PC users' electronic mail. This potential violation of privacy for purposes of harassment, fraud or industrial espionage, has helped create a strong demand by users for technology that will make E-mail truly private.

Napa, Ont.-based Elsid Software Systems Ltd. announced the release of Caribbean Software Inc.'s new Internet Opencode Padlock, a security utility which, the company claims, lets users "unlock E-mail messages, attachments or just about any information headed for the 'Net'." Elsid says claim the software is easy to install and compatible with a wide array of file types, applications and mail systems. Although reluctant to discuss the specifics of the software, Elsid claims that it uses sophisticated algorithms to create encrypted data that is very difficult for data thieves to decrypt. The Internet Opencode Padlock is priced at \$24.95.

For more information, contact info@elwid.CORAM.com or (613) 825-7173.



NEC handhelds offer color, and a larger keyboard

(NB) — Forget those tiny keyboards and monochrome displays on handheld computers (HPCs). NEC officials are showing the lessons they learned after fourteen months in the Windows CE-based HPC business. They are convinced miniature keyboards and black-and-white displays are not the path to HPC growth.

The new family of computers, called HPCs, uses Microsoft's Windows CE operating system which debuted in the fall of 1996 in Comdex/Las Vegas.

At Comdex 1997, NEC unveiled a monochrome HPC, the MP150, with the first new form factor large enough to incorporate a "notebook sized" keyboard. At CES, the company demonstrated the MP150C with the new keyboard and an eight-inch color LCD display.

The product will ship in April for less than US\$1,000.

See <http://www.necusa.com>

Audio Highway announces Web-based 'personalized radio'

Most Web-based "content" is static; the audio component of most Web sites is usually an add-on rather than a core element.

The exception are Web radio programs using software like RealAudio to provide decent quality streaming audio. A new customizable information service has been announced by the Cupertino, Calif.-based Audio Highway company.

Audio Highway was founded in 1994 with the objective of developing systems for archiving, transmitting and playing audio content over networks such as the Internet. The existing system allows subscribers to connect their computer to the Audio Highway site, and download and play content on the PC. A high degree of mobility is allowed through the use of a handheld audio playback device — the Listen Up Player.

To make the service attractive to the potential market, Audio Highway has contracts with media corporations such as National Public Radio, Newsweek, and Penguin AudioBooks, which have a variety of audio content archives, including books, magazine articles, radio shows and television soundtracks.

Audio Highway uses a proprietary software called AudioWiz to make selecting and downloading audio content easy and fast. Audio Web sells subscriptions over its Web site, and offers the Listen Up Player for a street price of about US\$199.

See <http://www.audiohighway.com>.

Amsdell protects against power outages with tiny inverter for personal computers

Richmond Hill, Ont.-based Amsdell Inc. is seeing strong international interest in its unique inverter technology, which allows low-cost, any lightweight Integrated Power Protection Systems (IPPS) to be installed in PCs.

The IPPS offers features of both a traditional Switching Power Supply (SPS) and a true Uninterruptible Power Supply (UPS). The significance for the computer market is considerable. The average home PC has a power supply, but very few home PC users will go to the expense of adding an external UPS device to maintain power to the PC if the external electrical service is suddenly interrupted. Amsdell's technology allows for an IPPS device, including a battery with at least 15 minutes' capacity, to be built within the dimensions of a regular PC power supply. If this innovation lives up to its promise, all PC users who depend on their computers for critical business functions will have an extra level of protection for both their data and their computer hardware.

Contact info@www.amsdell.com or (905) 881-3030

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Cisco announces auto-sensing switches

Cisco Systems Canada Co. has announced the Cisco Catalyst 2900 Series XL family of autonomous 10/100 Fast Ethernet desktop switches.

They offer a three-unit-on-pocket-per-second forwarding rate and a 1.6Gbps forwarding bandwidth for up to 16 ports in full-duplex operation. The switches are monitored through a Web-based interface.

The Catalyst 2900 XL is priced at \$3,213, the 2916M XL is \$5,999. The Catalyst 2924 and 2924C switches will ship in March, for \$5,599 and \$6,999, respectively. Call (416) 216-8000.

Targus bundles CompuTrace theft protection

Targus, Canada Ltd., the market leader in notebook computer carrying cases, has bundled the CompuTrace computer tracking system with selected models of carrying cases.

The CompuTrace software conceals itself on the hard drive, and periodically shut-out via the notebook's modem whenever the notebook is connected to a phone line. The CompuTrace software calls a dial-up number and transmits to serial number to the CompuTrace service. If the notebook has been reported stolen, CompuTrace staff trace the location the unit was sent from, and make arrangements with local law enforcement to make a recovery, and where appropriate to lay charges.

Contact <http://www.compuTrace.com> or <http://www.targus.com>.



ViewSonic's monitors pick up 'short depth'

One of the main technology directions of the monitor industry in the past several years has been a drive to pack more viewable screen area into monitors with ever smaller desktop footprints.

The most extreme, and most expensive, approach to reducing monitor weight and size is the flat panel display. Flat panels offer a high quality screen that only needs a few inches of desktop width to

accommodate it, but the prices, though dropping rapidly, are still too costly for most mainstream users. At a more affordable price point, conventional CRT (Cathode Ray Tube) monitors have recently been developed with Short Depth (wide deflection) electron guns to create image displays using a shorter beam distance, and hence a smaller monitor case size.

In the summer of 1997, Hyundai announced a 17-inch DeluxeScan HL-8708 monitor with a footprint equal to a 14-inch monitor. At the end of 1997, ViewSonic introduced its "S" space-saving class of 17-inch (16-inch viewable) monitors with the release of the G571, a 23-inch true dot pitch monitor with maximum resolution of 1,280 by 1,024 at 85 Hz. The G571 is aimed at PC users "with severe space restrictions, from medical labs, students' rooms to large corporate environments," according to ViewSonic. In addition to a 160-degree wide deflection electron gun (compared to the more usual 90-degree deflection angle), the G571 also has a double dynamic focus system and SuperDot screen, offering up to 30 per cent more image brightness and 10 per cent more color fidelity, plus OnView controls and ViewMatch color controls, says the company.

The suggested list price of the G571 is \$549 and includes a three-year warranty.

Contact: <http://www.viewsonic.com> or 1-800-838-8501.

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Microsoft unveils Office 98 Macintosh edition

At a rare Mac-only product unveiling in Toronto, Microsoft Canada offered a sneak preview of "the most significant update to date of the world's most popular productivity suite for the Macintosh" — the Office 98 Macintosh Edition.

According to Anna McKean, the product manager of desktop applications at MS Canada, "Office 98 Macintosh Edition is the culmination of three years of development, 25,000 hours of customer research and over one million feature requests on Microsoft's Web List, making it the most researched and customer-tested release of Office for the Macintosh yet."

Apple representatives at the San Francisco MacWorld were quick to agree that the new version of Office 98 Macintosh Edition contains technological advances that make it more capable in some respects than the Windows version of Office 98. OS/ME's user interface has been fully integrated with Mac OS/8, including full drag-and-drop functionality and QuickTime VR. Office 98 has powerful Web publishing capabilities, by allowing users to store files in HTML format.

Pricing for OS/ME ranges from \$599 for a new license to \$419 for an upgrade for a previous owner of MS Office applications, or a \$399 Macintosh Edition Gold version that includes Word, Excel, PowerPoint, Outlook Express, Internet Explorer 4.0, Encarta 98 Deluxe Edition, Bookshelf 98 and FrontPage 98.

See <http://www.microsoft.com/office98> for



Ted Garner

Micro Alternative adds IT director

Markham, Ont.'s Micro Alternative Solutions has named Ted Garner as IT director of Micro Alternative Integrates, a consulting company.

The company specializes in systems integration, custom network design, LAN and WAN planning services, network systems analysis and design, network performance and analysis services, file server and workstation configuration, systems network management services, and E-mail and intranet/Internet integration.

Garner joined the company from Spar Aerospace. He is Novell- and Microsoft-certified.

CrossKeys names VP marketing

CrossKeys Systems Corp., of Kanata, Ont., has appointed Hugh Browne as vice-president, marketing.

CrossKeys is a developer of service, network and element management solutions for telecom service providers.

Browne has a range of sales, marketing and business management experience. He previously held the position of vice-president, Advantage business market, for Bell Canada as well as senior vice-president, sales and marketing, for Nier Company of America, and assistant vice-president, international marketing for Intel Corp.

Be Inc. announces VP

Be Inc. has appointed Frank Boesman as vice-president, developer relations, effective immediately.

Last July, Be, of Menlo Park, Calif., published the first public release of its Be Operating System (BeOS).

In his role at Be, Boesman will be responsible for all aspects of the company's relationship with companies and people developing software for the Be Operating System (BeOS).

Boesman has 10 years of experience in product development and marketing roles at a variety of software businesses, ranging from small start-ups to established corporations. Prior to joining Be, he was vice-president, product development at Red Storm Entertainment of Morrisville, N.C.

Algorithmics expands team

Algorithmics Inc., of Toronto, has appointed three executives to corporate positions.

Sami Grouman takes the position of vice-president, marketing. Jane Harding is vice-president, client services, and John Lawney is chief financial officer.

Before joining Algorithmics, Grouman held various marketing positions with NCR Canada and AT&T GIS over a 20-year period. Most recently, he was the vice-president of NCR's sales and marketing support organization.

Harding was most recently vice-president, customer service for Rogers Cablevision. Previously, she was director, technical support for Delima Corp. and director, worldwide support Technologies for Symantec Corp.

Prior to joining Algorithmics, Lawney was the CFO of Spar Aerospace. Before that, he spent nine years at the Lawrie Munroe packaging company. □

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What's your news?

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Nifty Numbers

IT Services Are Healthy!

The IT services industry reports "excellent health" after a checkup by International Data Corp. (IDC) Ltd.

In the 1997 Worldwide and Canadian IT Services Overview Report, IDC said by the

end of 1997, the global services industry was expected to grow 14.2 per cent over 1996. IDC forecasts an annual growth rate of 13.1 per cent through 2000. Canadian IT services revenues reached \$11.3 billion in 1996.

Worldwide, consumer and corporate external spending was US\$252 billion.

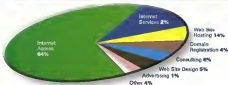
IDC said the growth of systems integration spending (39.1 per cent) finished the year below expectations. But contract programming is growing quickly, says IDC. "Presently, this is the result of the demand for Y2K conversion work, causing some companies to reconsider starting new projects, focusing instead on fixing the clock problems," said Lars Gunnarsson, a services research analyst with IDC Canada, in a statement.

Services departments at companies like IBM and Digital represent half of company revenues, with profits from these services generating an even greater percentage.

In Canada, the strongest revenue growth among the top 10, was recorded by Eckstein & Teucher and DMR, which both grew by more than 30 per cent.

IDC Canada can be reached by phone at (416) 344-0033. ■

Canadian Internet Service Provider Revenue Source



Source: International Data Corp.

Reader Poll

Last issue, we asked:

How popular will cable modems be in 1998 with your computing customers?

Please indicate which best closely reflects your view.

47% Customers are eagerly embracing cable modems, attracted by the high potential speeds of this technology. Interest will be high in 1998.

33% People are interested in cable technology for Internet access, but are mainly taking a wait-and-see approach. Interest will be moderate in 1998.

20% Customers are comfortable with the traditional telephone-based Internet services, and are hesitant to invest in the cable modem alternative. Interest will stay relatively low in 1998.

This issue, our question to you:

This month, Canadian Computer Wholesaler included a special feature on Portable Computing. So, we were wondering, when YOUR customers are shopping for notebook computers, which of the following factors is of MOST importance?

- | | |
|--|--|
| <input type="checkbox"/> Processing power | <input type="checkbox"/> Light weight |
| <input type="checkbox"/> Screen size and quality | <input type="checkbox"/> Long battery life |

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"The Sceptre Soundx 5500 Notebook is the fastest system in the review..."



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NIST, PC Digest, September 1997

Best Buy - *PC Portables*

"The Sceptre Soundx 4500 is an impressive machine..."



"Sceptre is selling this computer (166 MHz Pentium® processor with MMX™ Technology, 12.1-inch TFT SVGA display, 2.1 GB HDD) with 40 MB of RAM... for just under \$1,400, which puts it well within the reach of many. This configuration... deserves our "Best Buy" rating for the value represented."

PC Portables, November 1997

In head-to-head comparisons against the likes of Compaq, Hewlett-Packard, Gateway 2000, Micron and Toshiba, to name a few, Sceptre's Soundx notebooks have proven themselves to be the best. Call now for a distributor near you or check out our web-site for more information.

